INDUSTRIAL MEDICINE AND SURGERY

INDUSTRIAL MEDICINE

The Journal of Medicine in Industry

This Journal is dedicated to the advancement of sound industrial medicine, including the surgery of industrial trauma. To that end its varying contents will embrace scientific papers, reports, digests, news items and official statements, together with editorial comment. The editorial policy is to avoid undue censorship. Some contributions ably prepared will be published although contravening the personal opinions of the editors. Care will be exercised in checking the accuracy of known facts, as printed, but in all other respects statements and opinions are those of the author and may not be shared by the editors. On any article, the editors reserve the right to comment favorably or otherwise, in the current or any subsequent issue. On this basis, contributions are invited. The opinions expressed in any contributions, including the editorials of this Journal, do not necessarily reflect the attitude or opinions of any associated organization.

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MAY, 1957

Problem Drinking in Industry

REVIEW OF A COMPANY PROGRAM

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Consolidated Edison Company of New York, Inc.
New York City

LATE IN 1947, the Consolidated Edison Company of New York officially recognized chronic alcoholism as a medical condition and adopted a Company Procedure on Alcoholism. This decision was based on a policy that we would meet the problem openly instead of perpetuating the outworn pretense that it did not exist. The aim of the procedure was three-fold: (1) the early recognition of the employee with a drinking problem; (2) rehabilitation of the employee if possible; and (3) the establishment of a consistent basis for termination of employment when rehabilitation was fruitless.

This forthright recognition of problem drinking in industry coupled with a company program for rehabilitation has proved worth-while. An increasing number of employees have been restored to economic usefulness, and case absenteeism has been reduced. This was graphically demonstrated when we evaluated our experience with a special clinic for the medical treatment of alcoholism and ascertained that 72% of the employees who continued treatment for at least one year were able to maintain their jobs. These medical statistics were supported by inquiry directed to the operating departments concerned. The work performance of these employees in large measure was in accordance with the medical evaluation of their progress in rehabilitation.

Presented at the Ninth Annual Meeting of the American Academy of Occupational Medicine, Washington D.C., February 15, 1957.

Definition

THE Consolidated Edison Procedure defines alcoholism as the condition resulting from repeated overindulgence in alcoholic beverages wherein the employee is unable properly to perform his assigned duties. This limits the recognition of abnormal drinking to the area where it interferes with work performance, causes abnormal behavior on the job, or absenteeism. The term "problem drinking" is often used synonymously with alcoholism in industry. Technically speaking, it is considered an early stage in the development of chronic alcoholism.

In accordance with the Jellinek[1] concept of alcoholism, we recognize two major types of alcoholics: (1) the habitual excessive symptomatic drinker whose condition is primarily symptomatic of a social situation, and (2) the alcohol addict whose drinking has the elements of compulsion and whose condition appears to be based on an underlying psychological abnormality. At times it is difficult for the industrial physician to unravel which is the dominant underlying pathol-

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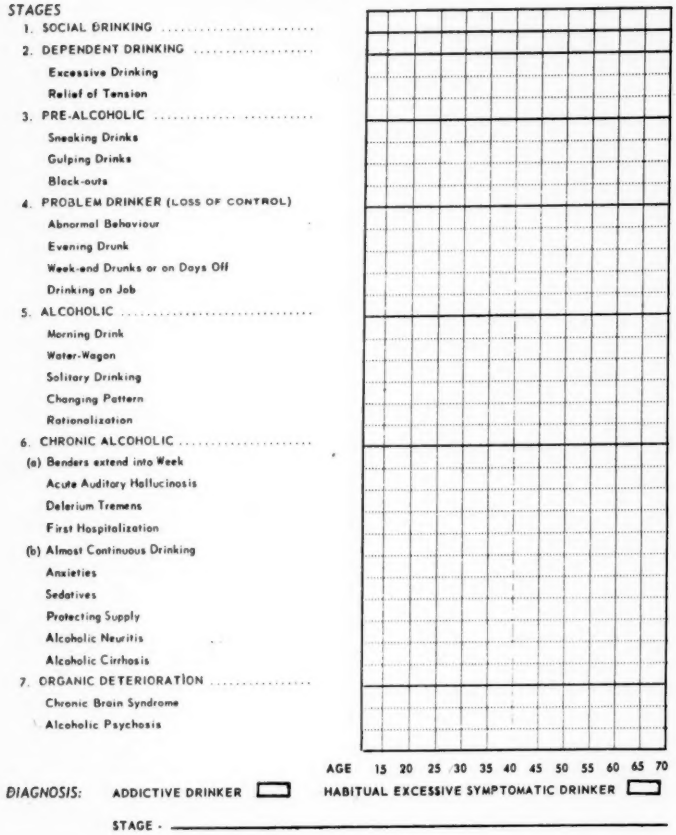
MEDICAL DEPARTMENT
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.

NAME _____ DATE _____

EMPLOYEE NUMBER _____ DEPT. _____

REFERRAL _____ AGE _____ SERVICE _____

*** PROFILE OF ALCOHOLISM**



*Clinical adaptation of "Phases in the Drinking History of Alcoholics" by E. M. Jellinek, Sc.D., and "Clinical Orientation to Alcoholism" by R. G. Bell, M.D.

Fig. 1.

ogy, social or psychological, and often both are intermingled. We also realize that from the point of view of the psychiatrist, the examination of employees with a drinking problem will reveal examples of various diagnostic psychiatric disorders such as, neurosis, psychosis, and character disorder. However, in our experience, therapy directed to the abnormal drinking behavior often appears to benefit the underlying psychiatric condition.

From practical experience we have developed a "Profile of Alcoholism"[2] (Fig. 1) outlining the progressive stages of this disorder. The alcohol addict appears to travel through the various stages at a faster pace and his whole course may be run at an earlier age. This type is comparatively rare in an industry with a stable employee population.

On the other hand, the habitual excessive symptomatic drinker usually requires 10 to 15 years of this pattern of abnormal drinking before he enters the stage where excessive drinking is producing serious problems. This type of individual has also been classified as the non-addictive alcoholic, and he represents nearly 80% of the problem drinkers that we encounter in industry.

In the pre-alcoholic phase, the alcohol addict experiences blackouts after a relatively moderate alcohol intake. The nonaddictive alcoholic also may experience blackouts, but infrequently and only after marked intoxication.

The problem drinker can be defined as an early alcoholic. He habitually indulges in alcoholic beverages beyond the limits of the normal drinker. Although he believes that he can control his drinking, it has reached such proportions that it is beginning to affect his relationship with his family, his friends, and his employer. In addition to being drunk in the evenings and on days off, he develops the pattern of consistent tardiness and recurrent excuses for absence due to minor illnesses. Abnormal behavior on the job can be manifested by arguments and recurring mistakes or minor accidents which he blames on other employees. Facial evidences of overindulgence and an odor of alcohol on his breath can be noted. In the early stages this may be most evident after the noonday meal. Alcoholic beverages constitute a considerable item in his budget. Often the results of his abnormal drinking are masked by being attributed to other causes, and he has come to be known as the "hidden man" by the group conducting research at the Yale Center of Alcohol Studies.[3] As his condition progresses the problem drinker finally drinks on the job, even in situations where operating rules specifically prohibit it. This may be associated with unexplained disappearance from his assigned post. With the experience gained under our Procedure on Alcoholism, we have come to recognize an increasing number of problem drinkers. In the early years of our program, the more chronic

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alcoholics constituted the bulk of the abnormal drinkers.

The problem drinker is considered to have entered the alcoholic stage when he needs the morning drink to face the next day. At this point he begins to rationalize his drinking behavior with the sequence of alcoholic alibis, solitary drinking, a change in the pattern of drinking, and even periods of abstinence under social pressures.

The onset of prolonged periods of intoxication, often referred to as benders, characterizes the chronic alcoholic. This is said to be more indicative of the alcohol addict. Benders may result in delirium tremens and even in hospitalization. These effects of prolonged heavy drinking may also occur in the nonaddictive alcoholic. In fact, at this stage some habitual excessive symptomatic drinkers seem to develop compulsive drinking, and we have been unable to differentiate this "secondary addiction" from the primary alcohol addiction.

Continued excessive drinking can go on to produce physical effects on the body, and can result in the individual developing one or more of the complicating diseases of alcoholism such as cirrhosis of the liver, peripheral neuritis, and severe malnutrition. The final stages of organic deterioration may be manifested by such diseases as the chronic brain syndrome, Korsakoff's psychosis, and Wernicke's encephalopathy. When the deterioration has progressed to the point where the individual has a total loss of a sense of responsibility, he may even be termed a psychopathic alcoholic. At times a constitutional psychopath may be included in this group in the early stages of his alcoholism.

Our experience indicates that problem drinking in industry constitutes a different condition from alcoholism in the community at large because of the smaller percentage of persons in the advanced stages of chronic alcoholism. In the first phase of our program at Consolidated Edison from 1948 to 1951, the recorded information indicates that the problem drinkers and early alcoholics constituted approximately 15 to 20% of the group. Chronic alcoholics were close to 60% of the total, and the advanced alcoholics with complicating disease accounted for the remaining 20%. On the other hand, our more recent experience since 1952 shows that approximately half of this group consists of problem drinkers and early alcoholics. Chronic alcoholism with organic deterioration has diminished proportionately.

Extent of the Problem

IT IS axiomatic that without a definite Company Procedure on Alcoholism, management cannot have any accurate knowledge of the extent of the problem. Our experience leads us to place the annual incidence of new cases at about one and a half to two cases per 1,000 employees per year. We have an average of 40 new cases each year with a drinking problem in our group of approximately 25,000 employees. A few background statistics on this employee group are presented in the interest of a better perspective. The average age of males is 47.3 years, of females 39.8 years. Males comprise 90% of the working force. The average length of service of all the employees is 22 years. About one-third of the males and one-fifth of the females are over 50 years of age. It is estimated that 70% of the employees are engaged in physical work and 30% are on the clerical staff. It is significant that the majority of the employees with a drinking problem are over 45 years of age. There have been only three females in this group. The total number of cases in the period from January 1, 1948, to December 31, 1955, adds up to 328 which, allowing for certain variations in employee population, amounts to somewhat over 1% of the employees. Consistent with previous years, 40 new cases were identified in 1956 but these are not included in the present study (December, 1956) because the period of follow-up is less than one year. Our experience with disability evaluation of chronic medical conditions leads us to believe that the real incidence of alcoholism in industry is probably 2% at least because cases of problem drinking may be hidden even in companies with an established alcoholism program.

Administration of the Procedure

UNDER our Company Procedure, the foreman and supervisor have the responsibility for the recognition of the early signs of uncontrolled use of alcohol among men working under them. It is not the responsibility of the Medical Department to discover alcoholics, but the industrial Medical Department does have a role to play in the early recognition of the drinking problem which is masquerading as a medical illness. The Medical Department has the responsibility for diagnosis, and for supervision of medical rehabilitation.

A training program for supervisors and foremen is in continuous operation to instruct this group in the understanding of the objectives of the Company Procedure on Alcoholism and to assist them in recognizing the early signs of problem drinking.

We have come to recognize that the following signs are indicative of the early phase of a drinking problem, and often characteristic of the "hidden man":

1. Consistent tardiness or absence on Monday morning and frequent occurrences of leaving early on Friday afternoon.

2. Unexplained disappearance from an assigned post during a tour of duty.

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3. Recurrent excuses for absence due to minor illnesses or too frequent off-duty accidents, particularly with assault as a factor.

4. Personality change in a previously good worker; such as arguments with others, recurrent mistakes for which he defends himself, minor accidents which he blames on others or on equipment, marked variation in mood, and disinterest in his work.

Operation of the Company Procedure

THE BASIS of the Company Procedure on Alcoholism is the use of a firm, judicious probation policy. This has been coupled with an adequate medical facility for rehabilitation. Probation is tentatively set at one year, with the understanding that it is really for an indefinite period. Since the employee may be denied progression increases, depending on his length of service, during the period of probation, we limit it to one year to provide an incentive for rehabilitation and a reward for his efforts. It would be poor psychology to extend this period officially. However, any relapse after the one-year period still brings the employee under immediate review by the panel as described below.

The steps in the operation of the Procedure on Alcoholism are as follows:

1. *Preliminary Warning.*

When any department of the company is confronted with a behavior problem arising from repeated alcoholic excess, the employee is given a preliminary warning by his immediate supervisor. This warning is always incorporated in the employee's record. In some instances we have observed that the warning may be repeated several times before definitive action is taken.

2. *Probation.*

When there is a recurrence of the drinking situation, the employee is immediately interviewed by his supervisor and placed on probation. In the event of a serious drinking situation, such as being found drunk on an operating job or an extended bender or hospitalization, the individual may be promptly placed on probation without undergoing any preliminary warning. In such cases, a review of the employee's record often brings out other facts of significance, such as repeated absences or instances suspicious of overindulgence on the job. The employee can request the shop steward to be present at the interview, and this is often the case. Over the years, a feeling of mutual trust has developed between the union and management on the handling of drinking problems, since the goal of the company procedure has been to give the employee a chance to rehabilitate himself.

The department head notifies the personnel director and furnishes him with a written report of all the circumstances to be forwarded to the Medical Department. Our experience indicates that a complete and detailed report giving the entire story is of tremendous assistance to the physician in making his evaluation of the case. The employee in his interview with his immediate supervisor is advised that information he conveys to the examining physician may not be considered as a privileged communication.

3. *Medical Department Examination and Follow-up:*

The Medical Department has the responsibility of determining if the employee is, in fact, an alcoholic, and of estimating the extent of his condition. If the Medical Department confirms that the employee has a drinking problem, he is offered the opportunity for rehabilitation through the Consultation Clinic for Alcoholism at the University Hospital. On the other hand, the employee may choose to report to AA, or place himself under the care of his own physician, or even refuse to follow any recommended treatment.

Upon completion of the examination, a brief medical report is forwarded to the department head and indicates that the individual fits into one of four categories: not an alcoholic, questionable alcoholic, alcoholic, or chronic alcoholic. The term "questionable alcoholic" usually covers the occasional excessive symptomatic drinker or the alcoholic where the paucity of facts at hand prevents the formation of a definite diagnosis. This may also be used when a neuropsychiatric condition is dominant and it is questionable if a drinking problem *per se* is present. The term "chronic alcoholic" is rarely used in the first medical report in order not to prejudice the employee's chance for rehabilitation. However, this classification is reported in those cases where rehabilitation efforts would not be fruitful, such as Korsakoff's psychosis.

4. *Recurrence.*

If the drinking offense recurs, the employee is immediately suspended by his department, and a panel for adjudication of his case is convened at the earliest possible moment. This panel includes a representative each of management, of the personnel and Medical Departments, and the department which employs the individual. The employee is re-examined, and at this stage the Medical Department report is detailed and conveys medical information that might in other circumstances be considered confidential. As noted above, the employee has previously been advised that information he conveys to the examining physician may be revealed at the panel discussion of his problem. In actual practice this has proved of great value to the employee concerned because it allows the Medical Department to present the train of circumstances which caused the relapse. Extenuating circumstances are considered by the department.

At the panel after all information has been

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presented and evaluated, the department renders its decision. This is discussed and reviewed by the whole panel. While alcoholism is treated as a medical condition, it gets no disproportionate share of attention. Means are provided to discipline and even discharge the occasional offender whose problem does not seem to be related to any underlying psychological or medical situation. With the worth-while results of the company program, the number of cases that have required panel review has decreased over the years.

Final action is determined in accordance with established procedure as follows:

(a) There is no medical or psychological basis for the drinking condition; action is to be determined by the employee's department. This obtains when the employee has been classified as "not an alcoholic." Departmental action in these conditions can result in discharge.

(b) There is an underlying disease resulting from chronic alcoholism and the prognosis is poor. The employee is recommended for the disability roll, but he does not receive the customary sick allowances as obtains in the case of purely medical disability.

(c) There is an underlying disease, but the prognosis is good as in certain cases of cirrhosis of the liver, peripheral neuritis, and reactive depression. The employee may be placed on the sick roll and receives sick allowances during such rehabilitation.

(d) The case is one of chronic recurrent or psychopathic alcoholism. The employee is then recommended for the disability roll without the benefit of preceding sick allowances.

It should be noted that sick pay is denied for episodes of acute intoxication.

Evaluation of the Results

THE BIG question about the Company Procedure on Alcoholism is "How shall we evaluate the results?" It is generally accepted that the basic criterion for rehabilitation of the alcoholic is uninterrupted total abstinence. This is unconditional in the alcohol addict. However, it is acknowledged that some of the early problem drinkers whose difficulty has developed primarily from habitual excessive symptomatic drinking on a social basis (nonaddictive alcoholics) can return to controlled drinking. Our experience indicates that it is sometimes difficult to evaluate the employee's story in the follow-up period, and we have come to consider the ability to maintain a job and render satisfactory work performance as practical criteria for rehabilitation.

Medical observation of the results of rehabilitation is based on periodic revisits to the Medical Department and is recorded on a "Recovery Scale" (Fig. 2). In the first year revisits are scheduled at monthly intervals for the first six

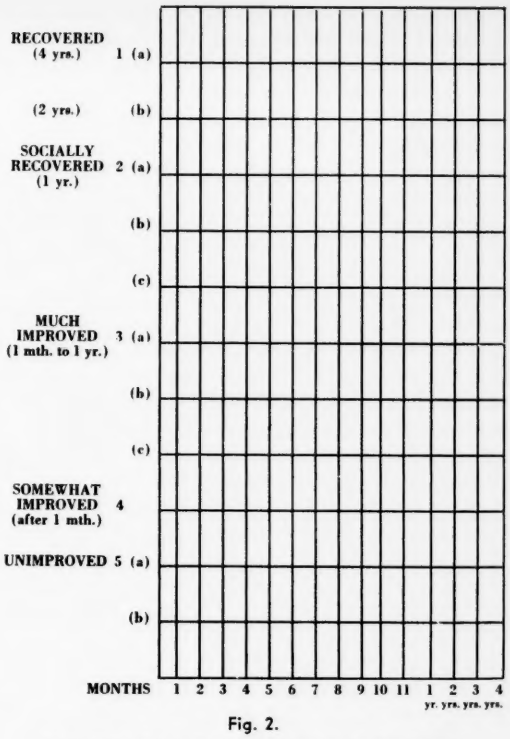
RECOVERED (4 yrs.) 1 (a)
(2 yrs.) (b)
SOCIALLY RECOVERED (1 yr.) 2 (a)
(b)
(c)
MUCH IMPROVED (1 mth. to 1 yr.) 3 (a)
(b)
(c)
SOMEWHAT IMPROVED (after 1 mth.) 4
UNIMPROVED 5 (a)
(b)
MONTHS 1 2 3 4 5 6 7 8 9 10 11 1 2 3 4
yr. yrs. yrs. yrs.

Fig. 2.

RECOVERY SCALE* FOR DEPENDENT DRINKING

1. *Recovered*

Grade (a)—(This classification only applicable after four years uninterrupted total abstinence.) All dependence on alcohol gone and replaced by a new system of satisfactory, mature adjustments and values.

Grade (b)—(This classification only applicable after two years uninterrupted total abstinence.) Dependence on alcohol appears to be gone; replaced by a progressively improving new system of satisfactory, mature adjustments and values.

2. *Socially Recovered*—(This classification only applicable one year after completion of initial treatment.)

(a) Has illness under control. No relapses. Patient aware of a progressive improvement in capacity to adjust to life without former recourse to alcohol.

(b) No relapses. Retains good motivation but still has significant psychological, social or metabolic problems. Requires further assistance.

(c) Occasional relapses not severe enough to impair new social status (home, employment, etc.). Retains good motivation but definitely requires further assistance.

3. *Much Improved*—(This classification applicable during first year and after first month following completion of initial treatment.)

(a) Has illness under control. No relapses. Patient aware of a progressive improvement in capacity to adjust to life without former recourse to alcohol.

(b) No relapses. Retains good motivation but has significant psychological, social or metabolic problems. Likely will require further assistance before he can improve.

(c) Occasional relapses not severe enough to impair new social status (home, employment, community, etc.). Retains good motivation but definitely requires further assistance.

4. *Somewhat Improved*—(This classification applicable after first month following completion of initial treatment.) Relapses occurring severe enough to jeopardize social status (home and work) but improvement in motivation and effort over pre-treatment period quite evident. Must have retention of sobriety for at least one month. Requires further assistance at once.

5. *Unimproved*—(This classification applicable at any time.)

(a) No noticeable change. Still considered candidate for treatment.

(b) Considered to be a hopeless candidate for any type of treatment at present time.

*Modification of Recovery Scale for antabuse patients by Erik Jacobsen, M.D., Copenhagen, from "Clinical Orientation to Alcoholism" by R. G. Bell, M.D.

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months and then every two months for the remainder of the year. During the second year the follow-up revisits are at three-month intervals, and in the third and fourth year at intervals of six months. Observation of the results of rehabilitation covers a four-year period, and a summary chart on each case is kept with the "Profile of Alcoholism" (Fig. 1) previously described. No reports are requested of the Consultation Clinic, so that the employees have come to realize that this clinic is not an extension of the Medical Department. We feel that the preservation of the confidential doctor-patient relationship has been an important factor in the success of the clinic.

Analysis of the results of rehabilitation has been shown to be a long-term affair. We feel that one cannot speak of real improvement until the completion of at least one full year of observation because earlier good results may prove deceptive. For a more sound evaluation of the results of rehabilitation under the Company Procedure on Alcoholism, we have not included any case that has not completed at least one full year of observation. The results on the current study, which is limited to the years 1948 to 1955, inclusive, are therefore somewhat different from those reported by the Consultation Clinic[4] itself.

In order to obtain a check on the validity of the medical observations, an inquiry was also made through the personnel director to the departments concerning their reaction to the employee's work performance and over-all attitude.

In evaluating the results of rehabilitation, figures cannot be precise. However, there are several tangible results: (1) the increase in rehabilitation rate with the salvage of employees who previously would have lost their jobs, and (2) the reduction in absenteeism. We believe these figures can be translated into dollars and cents. There are also intangible benefits, such as the experience of the supervisor in human relations and the improved employee attitude with better work performance.

Consolidated Edison Experience

OUR experience under the Procedure on Alcoholism can be divided into two periods: first, from January, 1948, to December, 1951, and second, since January, 1952, when the facility of the Consultation Clinic for Alcoholism at the University Hospital became operative early in that year. The results in the original group of 145 when reviewed in December, 1956, disclosed that 61 employees (42%) were able to maintain their jobs. Ten cases were subsequently referred to the Consultation Clinic and are not included in the original group. It should be emphasized that the majority of these cases have been followed for more than six years, and the shortest period of observation has been more than four years. The reduction from the previous figure of 53% maintaining their jobs in 1953 has been due largely to disability caused by the complicating diseases of alcoholism.

The major shortcoming of the program in the first period was that medical facilities for adequate treatment were generally not available. A majority of the cases seemed reluctant to enter AA. Perhaps this was due to the lack of an organized AA program under company sponsorship. Some cases derived great benefit from AA, but these were few in number. Convinced by the lessons of its own internal program of the need of a special treatment center, top management at Consolidated Edison in December, 1951, volunteered to underwrite the cost of launching the Consultation Clinic for Alcoholism at the University Hospital of the New York University-Bellevue Medical Center. The results of treatment at the Clinic have been an improvement on our previous experience. In fact, follow-up study of those cases who continued in treatment for at least one year disclosed that 72% maintained their jobs.

The Consultation Clinic, the first such clinic to be devoted solely to the alcoholic in industry, was developed under the guidance of Dr. A. J. Lanza, who was then Director of the Institute of Industrial Medicine. The Clinic was formally opened on February 4, 1952, and the Standard Oil Company of New Jersey joined in the use and support of the clinic facility in October of that year. Since then approximately 18 companies have taken the opportunity to refer problem drinking cases. Since February, 1954, the Consolidated Edison Employees' Mutual Aid Society has continued the contribution that was initiated by the company in previous years.

A word about our relationship to the Consultation Clinic. Every effort is made to reassure the employee the Clinic functions separately from the company. Our policy with respect to the Consultation Clinic can be summarized as covering the following four points:

1. The patient is referred only by the Medical Department and, of course, always with his consent. The largest group comprises those coming under the company procedure. The second group consists of those employees who have a medical condition in which alcoholism is considered to be a contributory factor. Finally, there are those employees who voluntarily present themselves because of a drinking problem.

2. The confidential nature of the doctor-patient relationship at the Clinic is maintained. No reports are transmitted from the Clinic to the Medical Department.

3. The employee pays the cost of his own Clinic visits.

4. Hospitalization is at the individual's own expense. (It should be noted that only one em-

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TABLE I.
GENERAL STATISTICS
ALCOHOLISM PROGRAM: 1952—1955

Total Cases		Type of Referral	
1952 — 53 *		Company Procedure —	147
1953 — 61		Medical —	27
1954 — 33		Voluntary —	9
1955 — 36			
183 (3 Females)			

* 10 referrals from previous years

Age and Service	1-5 yrs.	6-10 yrs.	11-20 yrs.	21-25 yrs.	26 yrs. & over
24-35	6	6	2	—	—
36-45	3	16	33	22	7
46-54	—	6	5	36	44
55-64	2	—	—	6	19

Classification	Non-Addictive	Addictive	Total
Questionable Alcoholic	7	—	7
Problem Drinker	30	1	31
Alcoholic	39	12	51
Chronic Alcoholic	63	19	82
Organic Deterioration	4	8	12
	143 (78%)	40 (22%)	183

ployee required short-term hospitalization for initiation of treatment.)

From 1952 to 1955, inclusive, 183 cases were reviewed under the alcoholism program. A statistical summary of these cases, including the type of referral, age and service, and classification, is given in Table I.

The largest annual number of referrals (61 cases) occurred in 1953 at the time of an organized training program for supervisors and employees and illustrates the value of such an approach. Since then the number of cases has fallen somewhat below the previous levels, perhaps because so many of the advanced cases already have been identified. The vast majority of cases were recognized under the Company Procedure on Alcoholism and this reflects on the inability of purely medical or voluntary measures to face up to problem drinking in industry.

A review of the age and service of this group indicates that the high point comes between 46 and 54 years of age, when the individual has had over 20 years of service. These employees obviously are a relatively stable group in contrast to the "skid row" alcoholics. The long years of employment have served as a lever in developing proper motivation toward treatment, because the probation process places job security in jeopardy.

Classification of the types of alcoholics reveals that approximately half are in the earlier stages of their condition. Other things being equal, the earlier specific treatment is initiated the better is the outlook for rehabilitation. It is noteworthy that, within the limitations of purely clinical diagnosis, only 22% were considered addictive alcoholics.

A breakdown of the follow-up experience for the period 1952 to 1955 is shown in Table II. A total of 183 cases were reviewed under the alcoholism program, and 145 accepted referral to the Consultation Clinic. Twenty-six employees refused treatment at the Clinic and were followed only in the Medical Department. Twelve employees were not referred. Four of these were questionable alcoholics in that their drinking history was not diagnostic; three cases presented dominant psychiatric disease, and five others were advanced alcoholics with marked organic deterioration. Of this entire group, 111 employees (60%) were able to maintain their jobs in the follow-up period.

A closer analysis of the results of the company program reveals that of the employees who were able to continue treatment at the Consultation Clinic for at least one year, 72% maintained their jobs. More detailed evaluation of the results of treatment can be visualized in a review of the recovery scale of this group of employees; over 60% are considered rehabilitated or socially recovered, and 30% are much improved. By contrast, while 61% of those who refused the treatment at the Consultation Clinic were also able to maintain their jobs, only 25% have made real progress toward recovery and rehabilitation. The poor results among those who discontinued treatment were made worse by the addition of those who relapsed within the first few months of treatment and discontinued therapy at the Clinic when their employment was terminated. Of the 12 employees who were not referred, only two maintained their jobs, and these were individuals in whom the diagnosis of problem drinking was questionable. These two individuals have not had any recurrence of their drinking problem and apparently are doing a satisfactory job. The remainder of this group had termination of their employment either by separation allowance or

TABLE II.
FOLLOW-UP STUDY (DECEMBER, 1956)
ALCOHOLISM PROGRAM: 1952—1955

Method of Treatment	Total	Maintained Jobs	Lost Jobs
1. Referred to Clinic	145	93 (64%)	52
a. Continued Treatment	99	72 (72%)	27
b. Discontinued Treatment or Terminated within 6 months	46	21 (45%)	25
2. Refused Treatment at Clinic	26	16 (61%)	10
3. Not Referred to Clinic	12	2	10
	183	111 (60%)	72

Recovery Scale of Employees Who Maintained Jobs	Continued Clinic Treatment	Discontinued Clinic Treatment	Refused Clinic Treatment
Rehabilitated	29.3%		12.4%
Socially Recovered	34 %	9.5%	12.4%
Much Improved	30 %	23.8%	37.4%
Somewhat Improved	4 %	38.2%	6.6%
Unimproved	2.7%	28.5%	31.2%

Period of Observation	Total	Maintained Jobs	Lost Jobs
Less than 12 months	46	—	46
12-18 months	33	21	12
19-24 months	19	13	6
25-36 months	38	33	5
37-48 months	30	27	3
49-60 months	17	17	—

Note: 1948-1951, Total—145 Cases, 61 (42%) maintained jobs. (Through December, 1956)

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disability retirement, and two other questionable alcoholics were discharged for recurrence of misbehavior.

Scrutiny of the period of observation indicates that over 60% of those who lost their jobs did so within the first year of follow-up. Relapse of the drinking episode poses a very serious problem. In the early years of our experience, panel review of such cases usually led to termination of employment on some basis. After the establishment of the Consultation Clinic there developed the philosophy that if an individual made a real effort toward rehabilitation at the Clinic and nevertheless suffered a relapse in the first three to four months of treatment, he could be given another opportunity at rehabilitation measures. Likewise, a relapse even after one year or more of treatment in an employee who had made sincere efforts to help himself did not prejudice a further trial at rehabilitation. Of the 72 employees who continued treatment at the Clinic, there were eight who suffered relapses after intervals varying from one to three years.

The reaction of the operating departments to the progress of the employees under the Procedure on Alcoholism approximated the medical evaluation. In September, 1955, 86 cases whose medical follow-up results had been listed as good in 71 and poor in 15 were reviewed by their own departments with reference to general attitude and work performance. Naturally, the voluntary cases and medical refers were not included in this survey. By January 31, 1956, the departments' opinions were rendered as follows: 58, good progress; 17, fair progress; six, poor results (terminated or being terminated under the Procedure on Alcoholism); and five were retired for age or other causes not related to alcoholism.

Analysis of the method of termination of those employees who lost their jobs revealed that 30 cases received disability annuities and 20 were granted allowances limited as to duration. Three were considered medically disabled because of a dominant psychiatric condition. Three employees died of chronic alcoholic disease. To illustrate that the alcoholism procedure was not intended as a reward for misbehavior, 10 cases were discharged and six resigned.

Another tangible result of the company program on alcoholism has been the reduction in absenteeism in the cases involved. The average recorded sick absence in the Consultation Clinic cases for a three-year period prior to referral was 13.5 days per year, approximately double the company average. We have reason to believe that absence due to alcoholic episodes may have been as much as three times the average because many of the absences under review were masked as medical conditions. Since the inception of treatment the absence severity rate has been less than four days per year in the rehabilitated cases.

It has been our policy to be conservative in estimating the savings to management under the Procedure on Alcoholism, but from the point of view of the increased rehabilitation rate, with savings in separation allowances and retirement pay, and the reduced absenteeism, we can say that the program more than pays its own way. In addition, anyone who works closely with the company program cannot help but be impressed by the over-all improved employee attitude.

Summary

A DEFINITE company policy is the first step toward a program for meeting the situation of problem drinking in industry. To begin with, it proclaims management's interest and support. It is essential that a complete understanding and an unreserved acceptance of the company program be obtained at all levels of management. This is best achieved by a forthright acknowledgment of top management that the problem really exists. A well-defined company policy should form the practical basis for administrative procedures to cover (1) early recognition, (2) rehabilitation, and (3) a consistent method for termination of employment when efforts to effect rehabilitation are unsuccessful.

The second step in the program is the establishment of medical facilities for rehabilitation. Without adequate means for treatment, a company program may degenerate into mere disciplinary measures. Success or failure of a company program will depend largely on the industrial physician's ability to locate and develop resources for treatment.

When adequate attempts at rehabilitation of an employee have failed, the termination of his employment on a consistent basis is usually necessary in the interest of good personnel procedures. From a practical point of view, the success of a company program will sharply reduce the need for termination measures.

The ultimate goal of any company procedure is the prevention of the disability from chronic problem drinking. A well-conceived and directed program is a firm step in this direction. The good results of industrial programs actually in operation indicate that such efforts not only yield material rewards in salvaging the skill and experience of long service employees, but also contribute to an over-all improvement in employee relations.

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The Common Cold and Stress Conditions

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THIS paper continues a minor series of strictly exploratory investigations centering about the modification of the common cold through the action of ascorbic acid and bioflavonoids. The variable presently introduced is psychic stress. This prophylactic study, single blind, was made several years ago during a 10-week March-May period with Creighton University students as the subjects. Ninety-six male and female volunteers of widely varied racial origin completed the 10-week regimen. Of these, 45 served as control and were inert placebo treated while 51 were subjected to the prophylactic agent. All subjects were of mature student age and foremostly medical (58) and pharmacy (32) students. The remaining six subjects were postgraduate students.

The chemical prophylactic agent was a mixture of ascorbic acid, in 250 mg. units, and lemon bioflavonoid complex* in 200 mg. units, both in tablet form. Daily, two ascorbic acid tablets and five lemon bioflavonoid tablets were ingested.

Procedure

EACH SUBJECT was provided an instruction sheet and record chart for daily tabulation and a two-week supply of the indicated tablets. At the termination of every two-week period, these record charts then completed were turned in and new charts and supplies issued.

The tablets were taken by all subjects in divided doses, morning and evening. If a subject missed a particular dose, he doubled the dose the next time, and so indicated on his chart. Since some students lived together, different colored tablets and charts were furnished for the placebo and treated groups as an added precaution, and every new supply of tablets was dispensed in a separate container bearing the individual student's name.

The subjects were unaware of the contents of the tablets, except for the assurance that they were in no way harmful. Discussion of the placebo concept was deliberately avoided, with the result that the subjects were left under the impression that possibly two different prophylactic agents against the common cold were being compared.

To avoid group infectivity, subjects living together were not assigned to a particular group. This was accomplished by arbitrary alphabetical assignments.

Analysis of the individual student's dietary was not possible, but it is a fair assumption that the dietaries of the two groups were, by and large, closely similar. This was certainly true of the many subjects of both groups who regularly ate in their fraternity houses. Furthermore, the dietaries of the several fraternity houses were also, by and large, closely similar.

Every subject was instructed to indicate his individual symptoms and judgment regarding the existence of a cold, on each day during the study. A "cold-day" therefore was defined as a day on which the subject reported a cold by self-diagnosis. Seven possible symptoms (chilliness, feverishness, headache, nasal discharge, sore throat, cough, excess sputum) if present were also recorded daily by all subjects. No side reactions were reported except by two subjects taking placebos. The reports of these subjects were not included in the analysis.

The 10-week period was believed to be sufficiently long for a practical prophylactic testing on the subjects at hand. The particular 10-week period of March-May was selected because the last two weeks, being final examination time, represented a period of clearly defined and pronounced psychic stress compared to the preceding eight weeks.[1] Kramár, Meyers and Simay-Kramár have detected a stress response in terms of capillary resistance under similar circumstances.[2]

The number of students included in each group is believed to be adequate, particulary because of the subjects' maturity and excellent attitude toward achieving objective findings. They were instructed to avoid any medication other than the tablets provided; and it is felt that if there were failures to follow these instructions literally, such failures were, by and large, equalized between the two groups.

*Lemon bioflavonoid complex consists of "water-soluble flavonoids and unknown extractives of the lemon, from which many of the inactive non-flavonoid water-soluble materials have been eliminated,"[14] and was supplied by Mr. A. J. Lorenz, Sunkist Growers, Los Angeles, California.

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It was assumed that on the average, the subjects in each group were probably equally susceptible to common cold infection at the start of this study. They were of essentially the same age group (young adults) engaged in similar work, and were living and working in the same or a similar environment, and had been so living and working since the preceding Christmas vacation. However, there was the possible variable that their day-to-day academic stresses preceding the final two weeks were not always equal or simultaneous, since not all were following the same curriculum.

The number of subjects completing the study was not exactly the same for each group, hence percentile values became requisite, as shown in Tables I, II and III.

Evaluation of the daily individual records of self-diagnosis was divided into three distinct, successive time phases or periods: (1) a preliminary or adjustment period of four weeks; (2) a normal or pre-stress period of four weeks; (3) a pronounced stress[3] period of two weeks. In the interest of objectivity, no mention whatever of these phases or of the stress concept was made before or during the investigation.

Manifestly, for the best comparative purposes the stress period should have been of four weeks' duration. Since the student groups were dispersed by the termination of the university year at the end of the two-week stress period, compilation of additional data including post-stress findings, was not a possibility. The variation in duration of the periods dictated that all tabulations and compilations be predicated upon a day-by-day basis.

For comparative purposes the percentile number of "cold-days" in a group was used as the measure of cold incidence, and similarly the percentile number of "cold-days" on which a symptom occurred was used as the measure of symptom incidence for each group.

Average duration of a cold was defined as the percentile number of "cold-days," divided by the percentile number of colds, within a group (placebo or treated). Average duration of a symptom was defined as the percentile number of "cold-days" on which the symptom was re-

TABLE I.
PERCENTILE INCIDENCE AND DURATION OF COLDS

	PRELIMINARY PERIOD (FIRST FOUR WEEKS)		PRE-STRESS PERIOD (SECOND FOUR WEEKS)		STRESS PERIOD (FINAL TWO WEEKS)		ENTIRE TEN-WEEK PERIOD	
	Placebo	Treated	Placebo	Treated	Placebo	Treated	Placebo	Treated
Number of "Cold-Days"	460	328	131	61	124	9.8	715	399
Number of Colds	93	65	32	19	24	5.9	149	90
Average Duration in Days	4.9	5.0	4.3	3.2	5.2	1.7	4.8	4.4

TABLE II.
NASAL DISCHARGE AND EXCESS SPUTUM REPORTED DURING COLD INCIDENCES, ON PERCENTILE BASIS

		Number of Days Reported		Number of Colds		Average Duration of Symptoms in Days	
	Symptom	Placebo	Treated	Placebo	Treated	Placebo	Treated
Preliminary Period (Weeks 1-4)	Nasal Discharge	431	277			4.6	4.3
				93	65		
	Sputum	247	161			2.7	2.5
Pre-Stress Period (Weeks 5-8)	Nasal Discharge	131	39			4.1	2.1
				32	19		
	Sputum	51	29			1.6	1.5
Stress Period (Weeks 9-10)	Nasal Discharge	116	2.0			4.8	0.3
				24	5.9		
	Sputum	60	7.8			2.5	1.3

TABLE III.
PERCENTILE SYMPTOM RATIOS*

	Incidence Ratios (Placebo:Treated)			Duration Ratios (Placebo:Treated)		
	Preliminary Period	Pre-Stress Period	Stress Period	Preliminary Period	Pre-Stress Period	Stress Period
Nasal Discharge	1.6	3.4	58.	1.1	2.0	16.
Sputum	1.5	1.8	7.7	1.1	1.1	1.9

*The incidence ratio is the percentile number of "cold-days" on which a symptom was reported by the placebo group, divided by the percentile number of "cold-days" on which the same symptom was reported by the treated group. The duration ratio is similarly the average percentile duration of a symptom, in "cold-days," as reported by the placebo group, divided by the average percentile duration, in "cold-days," as reported by the treated group.

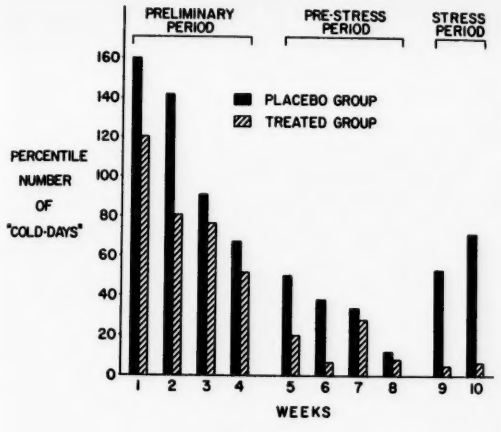

Fig. 1.
Incidence of colds.

ported, divided by the percentile number of colds, within a given group.

The term "significant," for a difference between the placebo and treated groups, is employed only when the difference was obvious.

Results

A REVIEW of the individual record charts indicates that the incidence of colds reported tended to be lower in the treated group during each week of the 10-week period. This was most striking during the stress period (Fig. 1).

The reported average duration of the colds varied but little for the placebo group whether viewed from the preliminary period, the pre-stress period, the stress period, or the entire 10-week period (Table 1).

However, the average duration of the colds (Table I) for the treated group became progressively shorter as the weeks went by: 5.0 days for the preliminary period, 3.2 days for the pre-stress period, and 1.7 days for the stress period.

As the "common cold season" waned with the advent and advance of spring, the incidence of colds in both groups also waned fairly steadily up to the time of the stress period. With the onset of stress, a sharp reversal in incidence occurred in the placebo group but not in the treated group (Fig. 1). During the stress period, the percentile "cold-days" numbered 124 for the placebo group and only 9.8 for the treated group. If 124:9.8 is expressed as an incidence ratio, the significant value of 12.7 appears which represents a six-fold increase over the corresponding ratio of 131:61, or 2:1, for the entire four-week pre-stress period, and a 10-fold increase over the corresponding ratio of 44:34.9, or 1:26, for the two weeks immediately preceding the stress period. No percentile difference at all between the two groups would be reflected by an incidence ratio of 1:1 or 1.0.

During the pre-stress period, the percentile ratio of the number of colds in the placebo group to the number in the treated group was 1.7. However, during the stress period, this ratio rose to 4.1.

During the pre-stress period, the percentile ratio of average duration (placebo group:treated group) was 1.3; during the stress period, the corresponding ratio rose to 3.1.

From the symptoms reported, two consistent patterns were discernible. These involved nasal discharge and excess sputum. Percentile incidence and duration of nasal discharge and of sputum tended to be lower in the treated group than in the placebo group during the "cold-days" throughout each of the three periods and were prominently so during the stress period (Table II). Nasal discharge and sputum percentile incidence and duration ratios are shown in Table III. The other five symptoms did not provide any clear or significant patterns.

Comment

NASAL discharge, which was significantly lower in incidence and duration in the treated group during the stress period, is a characteristic symptom of the common cold. Excess sputum, which was likewise lower, is a symptom frequently associated with nasal discharge during colds.

The fact that a significantly decreased incidence and duration of the common cold was found under pronounced stress conditions following the prophylactic administration of relatively large combined doses of ascorbic acid and lemon bioflavonoid suggests that there may be an effect arising from one or both of these citrus fruit components apart from the "alkalinizing influence" (which is largely a potassium ion effect[4]) and the increased fluid intake associated with ingestion of the citrus fruits as such. This is not to imply that such alkalinization and/or increased fluid intake are themselves necessarily without effect on the common cold.

The findings are in harmony with the concept that a latent or subclinical ascorbic acid deficiency throughout the tissues may not infrequently be present,[5] and that amelioration of this condition may be of significance in the incidence and duration of the common cold.

The ascorbic acid-lemon bioflavonoid complex, as administered, may have been of value by affording an additional vitamin intake needed to offset a subclinical deficiency,[6] and/or by affording favorable pharmacological action. The latter might include one or more of the following: protection of essential metabolites and metabolic processes,[7-15] detoxification,[16-21] a decrease of vascular fragility (i.e., an increase of vascular resistance),[22-24] and a decrease of vascular permeability.[25-26]

Stresses of various types including infections

are known to increase ascorbic acid requirements.[27-33] This may account for the results that were reported for the stress period, results which appear to be in harmony with those of Boines and Horoschak[34] on a series of 48 poliomyelitis patients subjected to prolonged prophylactic treatment with ascorbic acid and the bioflavonoid hesperidin (100 mg. of each per os daily) "to maintain normal capillary integrity." Boines and Horoschak reported that their patients inquired spontaneously at the end of the winter months whether the pills "prevented colds," because they had been noticeably freer of colds than other members of their households. These poliomyelitis patients were comparable to our subjects during the latter's stress period in that the patients were also under stress (poliomyelitis) and had likewise received prophylactic ascorbic acid and bioflavonoid over an extended period of time.

Several earlier group studies[35-37] that employed ascorbic acid as a prophylactic agent against the common cold, reported either slight or no significant benefits. However, those studies differed in three ways from the present one and are therefore not strictly comparable: in that they employed smaller dosages of ascorbic acid; in that they did not include bioflavonoid; and especially in that they did not include a pronounced stress over a controlled period of time.

Franz, Sands and Heyl[38] have recently reported a three-month, double blind, prophylactic pilot study in 89 medical and nursing students, during which 195 mg. ascorbic acid and/or one gram of naringin (bioflavonoid from grapefruit peel) were administered daily. These authors report no advantage from the naringin against the common cold in their studies (in which controlled stress apparently was not introduced) and no effect on blood ascorbic acid levels attributable to the naringin. Their 22 subjects who received ascorbic acid without naringin developed as many colds as did the controls, but the colds improved more rapidly.

Growing out of therapeutic use, there have been several reports of favorable action from large dosages of ascorbic acid-bioflavonoid administered to common cold patients.[23,39-42] On the other hand, Tebrock, Arminio and Johnston[43] have reported that the therapeutic administration of 0.2 gram of ascorbic acid and/or one gram of lemon bioflavonoid complex per os per day, in conjunction with standard palliative medication, for three days, in a double blind study with a large number of outpatients, did not effect the abortion of cure of the common cold.

Since the present preliminary studies strictly have been prophylactic, with emphasis on a stress factor, they do not lend themselves to direct comparisons with any wholly therapeutic measures.

Summary

1. A 10-WEEK, exploratory, prophylactic, single blind, placebo-controlled, self-diagnosis study was conducted with a group of 96 medical, pharmacy and allied students, for the observation of the incidence and duration of common colds during normal as well as pronounced stress periods. The prophylactic agent consisted of 500 mg. ascorbic acid plus one gram of lemon bioflavonoid complex per os per day. The 10 weeks were divided into three phases: a preliminary period of four weeks, a pre-stress period of four weeks, and a final stress period of two weeks. "Cold-days" were defined as days on which the subjects reported colds. The stress factor contemplated as significant was the two weeks of final examinations immediately following the eight other weeks of the total study period.

2. The incidence of colds reported by the placebo group was higher than that reported by the treated group throughout the entire 10-week period.

3. With the onset of stress, the pattern of relatively decreased incidence of "cold-days" reported by the treated group became particularly prominent in contrast to the reversed pattern of increased incidence of "cold-days" reported by the placebo group (Fig. 1).

4. The average duration of the colds was nearly the same for both groups during the preliminary period, and for the 10-week period as a whole, but was significantly shorter in the treated group during the pre-stress and stress periods.

5. Seven symptoms were recorded: chilliness, feverishness, headache, nasal discharge, sore throat, cough, and excess sputum. Nasal discharge and excess sputum tended to be lower in incidence and duration in the treated groups during the "cold-days," and were significantly so during the stress period. The remaining five symptoms provided no significant patterns.

6. There were no "side-effect" symptoms reported from the administration of the ascorbic acid and bioflavonoid.

7. The results tend to support the concept that the ascorbic acid-bioflavonoid prophylaxis as employed for young adults favorably influenced the common cold incidence and duration during a period of psychic stress. Since this evidence deals with the ascorbic acid-lemon bioflavonoid prophylaxis as a complex, no conclusions may be drawn as to effects attributable to the individual members of this entity.

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How to Get Along with People

FIND out what the other fellow wants. Everybody spends most of his time thinking about himself. Each of us would rather be himself than anyone else. Don't ever hurt people's self-esteem. Don't go into a place and start criticizing. Find something to praise. Tell people when they do a good job. Show appreciation. If you must find fault, tell about your own mistakes. Always help people "save face." You can say almost anything to people if you say it in the right way. Learn the right way. Learn to understand people. Try not to give direct orders. Avoid arguments. Learn to remember names. You can if you want to. Use the psychological knowledge you gain to improve yourself and your relations with other people.

—From "More Rules for Mental Hygiene—A Poster Seen in the Municipal Office Building" in *Baltimore Health News*, March, 1957.

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Local Injections of Hydrocortisone in 495 Orthopedic Patients

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THE PURPOSE of this presentation is to report our experience with the use of hydrocortisone* in 495 orthopedic patients in which 941 local injections of hydrocortisone were given for various conditions (Table I).

Two hundred and eighty-three patients were seen in the New York Hotel Trades Council and Hotel Association of New York City Health Center, and 212 in the office of one of the authors (P.W.L.). Only those cases with complete records and a follow-up of not less than three months have been included. A number of additional patients were treated, but they are omitted from this report because of inadequate records.

It is not within the scope of this presentation to review the literature. Most of the papers have been written by rheumatologists and therefore a discussion from an orthopedic view seems justified. The authors do not consider themselves qualified to discuss the biochemistry and pharmacology of hydrocortisone, and shall limit themselves merely to outlining its clinical value, its indications, the technique of administration, and an analysis of their results.

The reader is referred to a symposium on hydrocortisone published in the *Annals of the New York Academy of Sciences*, May 27, 1955.

*Hydrocortone® Merck Sharp & Dohme.

Rukes *et al* state "Hydrocortisone (17-hydroxycorticosterone) represents the major component of the corticosteroids secreted by the adrenal cortex into the peripheral blood. Approximately 80% of the corticosteroids found in adrenal venous blood is hydrocortisone . . . . The anti-inflammatory or antiphlogistic activity of hydrocortisone is approximately one and one-half times that of cortisone."[1]

Experimental work of Dougherty and Schneedi caused them to conclude that "adrenal cortical secretions unquestionably have a marked antiphlogistic action on the inflammation produced by allergy as well as that which follows other phlogogenic stimuli." They also found that "a comparison of the effective and ineffective hormones indicates that the greatest antiphlogistic activity was demonstrated by hydrocortisone."[2]

Hollander seems to have been one of the first to study the effect of hydrocortisone injections into arthritic joints. On January 27, 1951, his first three patients with rheumatoid arthritis were given intra-articular hydrocortisone injections into the knees with improvement within 24 hours. By the beginning of 1955, nearly 1500 of his patients received nearly 2400 hydrocortisone injections into the joints, bursae, or tendon sheaths. There was a "temporary" amelioration in about

TABLE I.
STUDY OF APPROXIMATELY 500 ORTHOPEDIC CASES IN WHICH HYDROCORTISONE WAS ADMINISTERED BY LOCAL INJECTION

	Knees	Shoulders	Feet	Elbows	Hands and Fingers	Ankles	Ganglia	Pelvis	Gouty Polyarthritis	Total
Number of Patients	198	88	79	58	31	17	14	9	1	495
Number of Limbs	216 (18 bil.)	90 (2 bil.)	81 (2 bil.)	60 (2 bil.)	33 (2 bil.)	18 (1 bil.)	14	9	2	523
Female	90	37	27	14	19	7	8	3	0	205
Male	108	51	52	44	12	10	6	6	1	290
Right	118	57	47	37	16	12	8	6	1	302
Left	98	33	34	23	17	6	6	3	1	221
Number of Aspirations	617	11	0	29	2	1	0	0	0	660
Number of Hydrocortisone Injections	550	100	108	81	42	28	20	9	2	941
Reaction	23	13	14	19	1	3	0	0	0	73
Results:										
Well	62	26	8	8	8	2	11	2	0	128
Improved	91	54	60	44	16	14	0	3	1	283
Unimproved	33	3	7	1	5	2	2	2	0	55
No Follow-up	30	7	6	7	4	0	1	2	0	57

TABLE II.
KNEES — 216 CASES

	Synovitis	Hemarthrosis	Arthritis	Misc. Cases	Medial Periarthritis and Pellegrini-stieda Disease	Popliteal Cyst Associated with Effusion	Cyst of Lateral and Medial Semilunar Cartilage	Prepatellar Bursitis	Totals
Number of Patients	134	12	8	7	8	11	6	12	198
Number of Knees	149 (15 bil.)	12	9 (1 bil.)	7	9 (1 bil.)	11	6	13 (1 bil.)	216
Female	63	1	6	3	2	5	2	4	86
Male	71	11	2	4	6	6	4	8	112
Right	81	7	8	4	8	4	3	8	118
Left	68	5	1	3	6	7	3	5	98
Number of Aspirations	519	33	—	1	—	28	2	34	617
Number of Hydrocortisone Injections	428	33	14	9	10	23	9	24	550
Reaction	16	1	—	5	1	—	—	—	23
Results:									
Well	40	8	—	1	1	2	1	9	62
Improved	67	1	5	5	7	2	4	—	91
Unimproved	22	1	2	1	—	3	1	3	33
No Follow-up	20	2	2	0	1	4	—	1	30

80% of arthritic joints but, in one-third of these, the effect persisted only for a day or two. Only slightly more than half of Hollander's arthritic patients obtained continued therapeutic result after repeated intra-articular administration of hydrocortisone. He also found "that much of the hormone is absorbed into synovial membrane and is apparently stored there."[3-4] A search is being conducted for more effective preparations,* particularly those with more prolonged local action, allowing more widely spaced reinjections for continued palliation of chronic arthritis.

In June, 1954, Young *et al* reported a series of 241 patients treated in Mayo's clinic who received 690 injections of hydrocortisone with favorable results. The knee joint was the most frequent site of lesion. No mention was made whether aspiration of effusion was performed prior to injection of hydrocortisone. One hundred forty-eight patients, or more than half, suffered from rheumatoid arthritis, and only the remaining 93 patients were real orthopedic cases.

Young's two cases with Osgood-Schlatter disease which responded favorably to local injections of 37.5 milligrams of Hydrocortone are quite instructive.[5] One of us (P.W.L.), without knowing about the favorable experience of Young and his associates, likewise suggested local hydrocortisone injection in a case of Osgood-Schlatter disease, explaining to the parents that it was being advised purely as an experiment, but the family refused any experimentation; another case (listed below) responded promptly to hydrocortisone.

In Young's paper there seems to be no discussion of acute calcific tendinitis at the shoulder, hip, or other locations. In such cases, relief after local hydrocortisone injection was quite dramatic in our experience.

*Since this article was written, the authors have collected another series of orthopedic patients treated with local injection of Prednisolone T.B.A. which will be published later.

I. Knee

THE KNEE was the site most frequently dealt with. There was a total of 198 patients, including 18 bilateral, making a total of 216 knees treated (Table II).

(A) SYNOVITIS WITH EFFUSION:

The most common lesion was one we classified as idiopathic synovitis with effusion. Out of 216 knees treated, 18 being bilateral, 134 patients had effusion in the knee. Thirteen patients with osteoarthritis or polyarthritis have been included in this group.

The patient would complain of mild to moderate pain in the knee, usually without disability. A history of trauma was obtained in the case of 18 patients. Laboratory work-up was usually negative. On examination, ballottement of the patella would be found, and flexion would be painful and sometimes slightly limited. Occasionally it was not an easy matter to establish the presence of an intra-articular effusion, especially in patients with fat "piano" type legs. In a few of our knee cases with a large amount of fluid, under a great tension, we were not sure at first that there was any effusion present. On the other hand, at times hypertrophied synovial villi gave an impression of patellar ballottement, when there was no fluid found in the knee joint on subsequent attempt at aspiration.

Although the technique of paracentesis of the knee joint is well known, meticulous performance of this operation is of sufficient importance to justify a brief outline of the method we have used. Local anesthesia, using three or four cc. of 2% novocaine solution, was always given through a two and one-quarter inch long, 24-gage needle in a 10-cc. syringe. In apprehensive patients ethyl chloride spray before the first needle puncture is quite worth-while. The needle is introduced over the lateral aspect of the knee, just behind the middle of the lateral border of the patella, and is directed cephalad and slightly ventrally into the

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suprapatellar pouch. Next, a four and one-half inch, 15-gage short beveled needle, attached to an empty, 10-cc. syringe, is introduced into the suprapatellar pouch. All the fluid is aspirated from the knee, using mostly gentle compression over the suprapatellar pouch rather than creating a negative pressure by withdrawing the piston in the syringe. If suction brings the synovial villi into the opening of the needle and stops the flow of the fluid into the syringe; complete 360° turning of the syringe around its long axis will disengage the obstructing synovial villi and reestablish the flow of the fluid. We feel that thorough aspiration of the fluid is important.

After emptying the knee, the aspirating 10-cc. syringe is removed leaving the needle *in situ*, and hydrocortisone, freshly withdrawn from a well-shaken bottle into a 2-cc. syringe, is injected through the same large needle into the knee joint. The needle is then withdrawn and the punctured wound is covered with a band-aid. It is needless to say that the most stringent aseptic precautions* should be used in this procedure, and it can, and should be, performed in a completely atraumatic manner and without pain. After some experimentation we have been injecting 2 cc. (50 mg.) of hydrocortisone into the knees as a routine dose. This is an office or clinic procedure, and patients remain ambulatory and return to work.

A small number of cases (about 5%—no precise statistics available) developed increase of pain and stiffness in the knee a few hours following the injection of hydrocortisone, but this reaction usually subsides in about 24 hours and the majority of our patients were able to continue their work. Aspiration and injection of 2 cc. of hydrocortisone is at first performed about once a week and later at longer intervals.

Early cases of idiopathic synovitis of the knee with symptoms of two or three weeks' duration showed the best response to treatment and usually became asymptomatic in about three weeks, averaging about three aspirations and hydrocortisone injections. About 30 or 40 cc. of yellow transparent fluid with fibrinous flakes were aspirated from an average knee. In some cases the amount of fluid was less than 10 cc., and in four it was more than 100 cc. The final result did not seem to be directly related to the amount of fluid, although prognosis in cases with very large effusion was somewhat poorer.

There were a few stubborn cases which showed continuous reaccumulation of fluid in spite of a subjective relief of symptoms. The impression was gained that in these cases persistent aspirations and hydrocortisone injections sometimes over a period of months, might eventually clear up the condition. In very stubborn cases immobilization of the knee in extension for two to three weeks may be helpful.

Osteoarthritic knees in old people, and particularly patients with rheumatoid polyarthritis, showed the poorest response to therapy. Nevertheless, even in these cases temporary relief for a few weeks or more was sufficient to justify the treatment as a palliative measure. Our eight patients (nine knees) with osteoarthritis of the knee without effusion also showed improvement.

(B) POSTTRAUMATIC HEMARTHROSIS:

In 12 of these patients, including postoperative cases with bloody or serosanguineous effusion following arthrotomy of the knee, results were most gratifying. We feel that in the latter, aspiration and hydrocortisone injection shortened the postoperative convalescence in most of these cases. In an exceptional case the first aspiration of bloody fluid is followed by serosanguineous and later serous effusion, the latter recurring for many weeks, but finally responding to repeated aspirations and hydrocortisone injections. In one of our cases there was persistent chronic synovial effusion for about one year with eventual complete recovery following repeated aspirations and hydrocortisone injection and a knee-cage brace.

(C) MEDIAL PERIARTHRITIS AND PELLEGRINI-STIEDA DISEASE:

Eight patients, with nine knees, presented a rather typical identical clinical picture consisting of pain and localized tenderness over the medial aspect of the knee just above the joint line. There was no effusion in the joint and all motions were free and painless. There was no history of locking and no evidence suggestive of intra-articular involvement or strain of medial collateral ligament. Some patients gave a history of a minor trauma, and all of them had symptoms that had been present for weeks or even a couple of months. The x-rays were invariably negative. All showed prompt improvement after injection of 1 cc. of novocaine followed with 1 cc. of hydrocortisone into the tender spot. In one case the lesion was at first in one knee with prompt response to hydrocortisone. Several weeks later the patient developed exactly the same symptoms in the opposite knee and obtained immediate relief after hydrocortisone. We designated this group as "medial periarthritis" of the knee. They resembled strikingly the symptoms of the two cases of Pellegrini-Stieda disease, except for less acute symptoms and absence of calcific deposit, and thus they are included in this group. Both of the latter showed dramatic relief following local injection of 1 cc. of hydrocortisone under local anesthesia. In one of these patients examined several months later the roentgenograms showed the disappearance of the calcific deposit.

(D) CYST OF SEMILUNAR CARTILAGE:

We treated six patients, two females and four males, with involvement of six knees. Two cysts

*We know of at least two patients who developed suppuration, one of the knee and the other of the shoulder, following poor asepsis in local injection of hydrocortisone performed elsewhere.

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were over the medial semilunar cartilage and the remaining four over the lateral, three on the right side and three on the left. Attempt at aspiration was made in all cases prior to injection of hydrocortisone but only in two knees were we able to obtain a typical gelatinous, ganglion-like material. One multilocular cyst, the size of a lemon, over the medial semilunar cartilage of the left knee decreased in size, and pain and limitation of motion were diminished after several aspirations followed with hydrocortisone injections. However, subsequently the patient had a meniscectomy and therefore this case was listed as a failure as far as the hydrocortisone therapy is concerned. Our usual technique is the same as in ganglion: under local anesthesia the cyst is aspirated (if possible). One cc. of hydrocortisone is then injected. Numerous perforations are made in its wall using a 15-gage needle. Only one case seemed to be completely well when seen for the last time after the above procedures.

Four cases showed temporary improvement with diminution or even disappearance of the cyst and complete relief from pain and "giving away" of the knee.

In all of them there was some recurrence of symptoms several months later which again was relieved by repetition of the above procedure. Thus far, with the exception of the above-mentioned huge cyst of the medial semilunar cartilage, the remaining five patients have been so much relieved that surgery hasn't been necessary.

(E) ARTHRITIS:

Eight patients (nine knees) with rheumatoid arthritis or osteoarthritis of the knee, six female and two male, had eight right- and one left-sided lesion. They received a total of 14 hydrocortisone injections, with five showing temporary improvement, two remaining unimproved, while two could not be followed up.

Although none of these patients could be classified as cured, the temporary alleviation of symptoms for weeks or even months seemed to justify the treatment. Some of these patients returned requesting additional injections of hydrocortisone.

There were several cases of gouty arthritis which responded very well to local injections of hydrocortisone.

(F) PREPATELLAR BURSITIS:

Twelve patients with 13 knees with prepatellar bursitis responded favorably to aspiration and hydrocortisone injections (usually 1 cc.). Seven out of 13 bursae showed bloody effusion. One patient who already had seropurulent effusion on first aspiration did not respond to hydrocortisone and subsequently was operated upon.

(G) OSGOOD-SCHLATTER DISEASE:

Our experience is limited to one male patient 19 years old who had typical symptoms and roentgenologic findings in his left knee. He worked as an electrician, requiring frequent kneeling which he was unable to do for three months. One injection of 2 cc. of hydrocortisone gave him complete relief, and he has remained asymptomatic for more than six months. The result was so striking that we do not hesitate to recommend it for further trial.

(H) MISCELLANEOUS:

The above-described case of Osgood-Schlatter disease is included in seven knees listed under miscellaneous cases in the table analyzing the knees. This group also includes two cases later classified as internal derangement of the knee, one case of a strain of ligamentum patellare, two cases diagnosed indefinitely as a strain of the knee, and one case of tender osteophyte over the medial border of the patella.

(I) POPLITEAL CYST:

We treated 11 patients with typical popliteal (Baker's) cyst over the posterior medial aspect of the knee. Almost all cases also had an effusion in the knee joint, suggestive of communication between the cyst and the knee joint; in three cases the communication appeared to be quite evident. While we obtained cures in two cases, the impression was gained that popliteal cyst, as a rule, does not respond to repeated aspirations and hydrocortisone injections (usually 2 cc.). In one case treated with aspiration and hydrocortisone injections both of the cyst and the knee joint, the effusion in the knee disappeared, but the popliteal cyst persisted and was subsequently removed. Not infrequently popliteal cyst causes only rather mild symptoms, and may sometimes be left alone. In one of our cases, an elderly woman with bilateral popliteal cyst, both cysts disappeared, one after injection of hydrocortisone and the other spontaneously.

II. Shoulder

NEXT in number to the knee cases are the 88 patients treated for lesions of the shoulder, two bilateral, making a total of 90 shoulders (Table III).

(A) ACUTE CALCIFIC TENDINITIS:

Practically all of the 38 patients with acute calcific tendinitis of the shoulder, 28 of whom had symptoms of less than two weeks duration, responded really dramatically to hydrocortisone. Routinely the tender area corresponding to the calcific deposit was infiltrated with several cc. of 2% novocaine solution, using a two-inch, 24-gage needle, after preliminary spraying of the skin with ethyl chloride. The point of the needle was brought down to the bone and then withdrawn a few millimeters. Attempt at aspiration through the same needle or by changing to a 20-gage was made routinely. In only four patients (about 10%) calcareous material was obtained. In the latter cases, after a few repeated injections of a few cc. of novocaine followed by reas-

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TABLE III.
SHOULDERS — 90 CASES

	Tenosynovitis Long Head Biceps*	Calcific Tendinitis*	Localized Periarticular Tenderness	Tenderness of Scapula	Arthritis Acromic and Sternoclavicular Joints	Tenderness over Vertebral Spinous Process	Subacromial Bursitis with Effusion	Totals
Number of Patients	37	38	2	3	4	3	1	88
Number of Shoulders	38 (1 bil.)	39 (1 bil.)	2	3	4	3	1	90
Female	16	17	2	1	—	—	—	37
Male	21	21	—	2	4	2	1	51
Right	24	26	—	1	2	3	1	57
Left	14	13	2	2	2	—	—	33
Number of Aspirations	1 1 Case 1/c effusion	10 Calcium washed out in 4 cases	—	—	—	—	—	11
Number of Hydrocortisone Injections	46	38	2	5	5	3	1	100
Reaction	6	6	1	—	—	—	—	13
Results:								
Well	7	17	—	1	—	—	1	26
Improved	26	19	2	1	3	3	—	54
Unimproved	2	—	—	1	—	—	—	3
No Follow-up	3	3	—	—	1	—	—	7
	* Includes 1 Triceps	* 1 Case Bil. Right shoulder treated with HC; left with Novocaine. Both improved, right better than left.						

piration of fluid with calcareous material, 2 cc. of hydrocortisone were injected. A number of patients were immediately relieved (due to novocaine) and were even able to move the arm without any pain. In six cases exacerbation for the first six to 48 hours was recorded. In a number of cases relief was immediate without any exacerbations.

Only patients with acute symptoms were treated with hydrocortisone; we did not use it in cases of "dormant" calcific deposit in patients complaining of mild occasional pain and with normal mobility of the arm.

In a previous publication one of us (P.W.L.) reviewed the novocaine infiltration therapy in acute calcific tendinitis, and we are fully aware of the therapeutic effect derived from plain injections of novocaine and needling.[6] Nevertheless, our results in acute calcific tendinitis have been definitely improved by local injection of hydrocortisone.

One of our patients, who was promptly relieved by hydrocortisone, developed acute calcific tendinitis over the opposite shoulder a few weeks later. She was given local novocaine infiltration by another orthopedist, also with prompt relief. However, the comparison of both shoulders from the patient's point of view and from the objective observation by one of us (P.W.L.) seemed to be in favor of the side treated with hydrocortisone.

Several of our patients who were followed for a long period showed disappearance of the calcific deposit. Since disappearance of the deposit has been recorded also following infiltration with novocaine, and since spontaneous disappearance without any treatment has likewise been observed, we hesitate to credit this to hydrocortisone.

(B) TENOSYNOVITIS OF THE LONG HEAD OF BICEPS:

There were 37 patients in whom this diagnosis was made. We appreciate the fact that this diagnosis can only be postulated with a reasonable amount of certainty and cannot be definitely proved. However, when we see a patient with chronic mild shoulder complaints of weeks' or months' duration, and find tenderness localized along the anterior aspect of the humeral head corresponding to the location of the synovial sheath of the tendon of the long head of the biceps, and the tenderness disappears on rotations of the arm and reappears when the synovial sheath rolls under examining finger, we feel justified in assuming that we are dealing with a lesion of the bicipital tendon.

Active motions in the scapulohumeral joint may be free and practically painless; at times active frontal abduction may be restricted and it is usually painful, particularly when it is performed against some passive resistance. In seven of our cases bicipital tenosynovitis was associated with a "frozen shoulder" syndrome. The great majority of our patients were able forcefully to flex their forearm, with the elbow held at 90°, against considerable passive resistance, and experienced no discomfort. Likewise, active supination of the forearm with the examiner trying to pronate it (supposedly a biceps function test?) was invariably painless. As a rule, the roentgenograms were negative. In 10 patients presenting a typical clinical picture of bicipital tenosynovitis

the roentgenograms showed a various-sized calcific deposit in the subacromial region. In all of these shoulders the patient reported tenderness only anteriorly along bicipital tendon, and none whatsoever laterally over the deposit. We therefore worked under the assumption that the calcific deposit was asymptomatic or "dormant," while the bicipital lesion was the primary cause of the patient's symptoms. This was further substantiated by prompt relief after injection of 2 cc. of hydrocortisone into the bicipital synovial sheath. Two of our patients with a "dormant" calcific deposit failed to show any improvement after one or two injections of hydrocortisone given into the subacromial region by other surgeons. Injection into the bicipital sheath brought a spectacular result after symptoms and disability persisting for months. One patient with painful shoulder following a rupture of the tendon of the long head of the biceps became asymptomatic after local injection of hydrocortisone. A few patients had recurrence of bicipital lesion after relief for a few months and again became completely symptom-free after additional injection of hydrocortisone into the bicipital sheath.

It is interesting to note that in our series of 77 shoulders, i.e., 39 calcific tendinitis, and 38 bicipital tenosynovitis, the right shoulder was affected twice as frequently (50) as the left (27), practically all patients being right-handed; in this group there were 42 males and 33 females.

In two shoulders with localized anterolateral periarticular tenderness and negative roentgenograms, one of them a mild frozen shoulder, pain and tenderness disappeared after injection of 2 cc. of hydrocortisone into the tender spot.

Two cases of acromioclavicular and two of sternoclavicular arthritis responded to hydrocortisone injections.

We had three cases of pain and tenderness strictly localized over the spinous process of C6 or C7, one of them (C7) of many months duration; all responded favorably to local injection of hydrocortisone.

(C) SCAPULA:

We have observed three cases, all of which presented a strikingly identical clinical picture, with chronic pain and tenderness strictly localized over the upper vertebral corner of the scapula. Although we were unable to interpret the etiology of this condition it seemed to represent a separate clinical entity. Of the three of these patients who received local injections of hydrocortisone, one showed improvement.

III. Foot and Ankle

THE 79 foot and 17 ankle cases were the next largest group (see Table IV).

(A) PAINFUL HEEL:

The "painful heel" was the most common condition treated with hydrocortisone. We realize the inadequacy of the diagnosis "painful heel," but we have been using it because of want of a more etiological classification. The patient usually complains of pain under the heel, which is worse on arising in the morning and may be decreased after some walking, to be again increased after a day's work. There may be a history of overwork or preceding infection (tonsillitis, upper respiratory infection, etc.). The symptoms are rather stubborn, and may persist for weeks and months. On examination a rather localized tenderness is found usually over the medial, anterior plantar aspects of the heel.

Calcaneal "spurs" are sometimes discovered on the roentgenograms, and not infrequently are held responsible for producing the symptoms. It has been our impression that this is "putting the buggy before the horse." Plantar calcaneal spurs should be looked upon as a manifestation of the

TABLE IV.
FEET — 81 CASES

	Painful* Heel	Metatarsalgia	Tenosynovitis (Tibialis, Peroneals, Extensor Longus, Flexor Hallucis Longus, Etc.)	Sesamoiditis Big Toe	Tenderness over Bunion	Dorsal Bony Prominence (1st Cuneiform)	Tendinitis and Peritendinitis Achilles Tendon	Achillobursitis	Bursitis Bunion	Hallux Rigidus	Totals
No. of Patients	29	21	15	2	1	1	3	5	1	1	79
No. of Feet	29	22 (1 bil.)	15	2	1	2 (1 bil.)	3	5	1	1	81 (2 bil.)
Female	9	14	3	1	—	—	—	—	—	—	27
Male	20	7	12	1	1	1	3	5	1	1	52
Right	19	11	9	2	—	1	1	4	—	—	47
Left	10	11	6	0	1	1	2	1	1	1	34
No. of Hydrocortisone Injections	37	26	19	3	1	2	8	10	1	2	109
Reaction	3	5	2	1	—	—	2	—	1	—	14
Results:											
Well	2	4	1	1	—	—	—	—	—	—	8
Improved	21	16	12	—	1	2	2	4	1	1	60
Unimproved	3	1	1	1	—	—	—	1	—	—	7
No Follow-up	3	1	1	—	—	—	1	—	—	—	6

*Spurs—13 cases on affected heel.
*Spurs— 2 cases on unaffected heel and absent on affected heel.

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usual tendency towards calcification of the ligamentous structures at their insertion to the bone in middle-aged individuals, particularly of the laboring class, in whom these structures are constantly under considerable stress. In 13 of our unilateral "painful heel" cases, the spur was present on both heels, and in two it was found only on the asymptomatic heel, but was absent on the painful side. In rare cases of "painful heel," apparently due to a localized periostitis, the original roentgenogram may be negative, with "spurring" noted subsequently, sometimes when clinical symptoms are subsiding.

We are opposed to surgical removal of plantar calcaneal spurs as a routine procedure. Cases have been observed in which very large plantar calcaneal spurs have been reformed following surgical removal, and yet the patient had no symptoms. All of these seem to prove that "spurs" in the majority of cases are not the cause of "painful heel," but in a few they might be its consequence.

In a total of 29 painful heels, 17 had tenderness typically localized over the anterior medial plantar aspect of the heel; in three cases the tenderness was found to be in the center of the heel, and no record was available in nine cases.

As a by-product of this investigation we have recorded an additional four cases (listed under tenosynovitis of the foot) which at first glance were thought to be "painful heel." However, on further study it was noted that the tenderness was located more anteriorly over the medial aspect of the sole corresponding to the area of the synovial sheath of the flexor hallucis longus and the flexor digitorum longus, where these tendons cross each other. When the tendons were made taut by passively dorsiflexing the hallux and the lesser toes, the tenderness appeared to be more marked and localized over these tendons. Furthermore, a local injection of hydrocortisone aimed into the tendon sheath practically always gave prompt relief.

The above observations induced us to postulate that we were dealing with a separate entity; a tenosynovitis of flexor hallucis longus and flexor digitorum longus. As in tenosynovitis of the long head of the biceps humeri we cannot be positive about the diagnosis, but we believe that we are justified in postulating it with a reasonable amount of certainty.

(B) ANTERIOR METATARSALGIA:

Metatarsalgia is pain and tenderness over the metatarsals, which occurs most commonly at the metatarsophalangeal joints, that of the second toe being most frequently affected. The reason for this is that the second metatarsal is the longest and, therefore, is subjected to a greater stress than the remaining lesser metatarsals. According to our conception, "metatarsalgia" is usually a chronic inflammatory lesion of the metatarsophalangeal joint, resulting from repeated traumatization, produced by faulty distribution of weight bearing, concentrating over the second metatarsal head. Since hydrocortisone possesses potent anti-inflammatory qualities, we tried to inject it intra-articularly into the affected metatarsophalangeal joint, from a dorsal approach, under local anethesia, using 1 cc. of hydrocortisone.* The results were encouraging. A few of our cases, quite stubborn and chronic, experienced prompt relief in a day or two, with occasional temporary reaction (in five cases). In other cases there was only temporary, or no relief at all.

We also had a few cases with tenderness over the first metatarsophalangeal joint, including hallux rigidus, gout,** and lesions of sesamoids, practically all with favorable results. One case of Freiberg-Kohler's osteochondritis of the right second metatarsal head in a girl 14½ years old with pain and difficulty in walking, present for one and one-half years, was greatly relieved after 1 cc. of hydrocortisone was injected into the second metatarsophalangeal joint; she was kept quite comfortable by another injection a few months later.***

(C) TENDONS:

The tenosynovitis of the anterior and posterior tibials and of the peroneals responded well to hydrocortisone injections.

Achilles tendon has no synovial sheath, but it is surrounded with a loose areolar peritendinous tissue permitting free gliding. Peritendinitis of Achilles tendon, combined with tenderness and enlargement of the tendon itself — tendinitis — is amenable to local hydrocortisone administration.

Here we should also mention cases of anterior achillobursitis (bursa in front of the insertion of the Achilles tendon) which also showed improvement after hydrocortisone. The results were less favorable and the improvement was only temporary in cases where the roentgenograms showed productive and sclerosing changes of the os calcis at the insertion of the Achilles tendon.

(D) ANKLE:

Of the 17 ankles, 16 presented an involvement of the subtalar (talocalcaneonavicular) joint, and one of the crurotalar joint. Practically all showed some response to hydrocortisone. The injection into the crurotalar joint was given from an anterior approach either tibialward or fibularward from the middle line, with the foot held in a plantar flexion.

(E) SUBTALAR JOINT:

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*In one recent case with chronic pain and tenderness beneath the second metatarsal head of one year duration, we obtained relief after injection of 0.5 cc. of hydrocortisone into the soft tissue beneath the second metatarsal head.

**We have now a number of cases with acute gouty arthritis of big toe treated with local injection of hydrocortisone with very spectacular results.

***After this article was written, we had another similar case with prompt response to hydrocortisone.

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The subtalar joint lesion is rather common and is usually associated with a protective peroneal muscle spasm which keeps the foot in eversion. The eversion (pronation) is the position of relaxation of the subtalar joint, as it was brought out by one of us (P.W.L.) in previous publications.[7,8] A two and one-quarter inch, 24-gage needle is inserted into sinus tarsi just in front of the lateral malleolus and pushed medially between the talus and calcaneus into the interosseal talocalcaneal ligament; the latter is infiltrated with 2 cc. or 3 cc. of novocaine prior to the injection of hydrocortisone (2 cc.). The subtalar joint lesions may be divided into three groups with only a quantitative difference. Group one — early cases, are usually "first offenders" without a history of previous similar episodes, and with negative roentgenograms show the best response. In a few, peroneal spasm may disappear right after the infiltration with novocaine and it may be possible to invert the heel passively. Group two — also with negative roentgenograms but with a history of previous similar symptoms; it is usually impossible to invert the heel after injection of novocaine; apparently there are already chronic fibrous changes present with contractures of the ligamentous structures. Hydrocortisone may give relief in these cases, but prognosis is less favorable. Group three — chronic recurrent cases, or those with polyarthritis, showing productive osteoarthritic changes in the roentgenograms, and naturally hydrocortisone may give only a temporary relief, as we are dealing with actual changes of the articular surfaces and partial fibrous ankylosis of the subtalar joint.

IV. Elbow

THERE were 58 patients with 60 elbows treated (see Table V.).

(A) EPICONDYLITIS:

There were 40 patients with lateral epicondylitis and two with medial epicondylitis. It is interesting to note that there were 27 males against 13 females, and that the right side was affected in 26 cases with 16 on the left side; these observations seem to indicate that the condition is an occupational lesion. The pathological changes of what is now classified as "epicondylitis" are still a moot question. The old interpretation of "bursitis" has been rejected by the majority of orthopedic surgeons. It is not acceptable to the authors because anatomically there is no deep constant bursa either over the lateral or medial epicondyles. Furthermore, the symptoms of "bursitis," if one compares the epicondylitis with olecranon bursitis, for example, are entirely different.

Generally it is assumed that the so-called "epicondylitis" is the result of a constant stress concentrated over a small area of tendinous origin from the bone, which also represents our view.

TABLE V.
ELBOWS — 60 CASES

	Epicondylitis Lateral: 40 Medial: 2	Olecranon Bursitis	Totals
Number of Patients	40	18	58
Number of Elbows	42 (2 bil.)	18	60
Female	13	1	14
Male	27	17	44
Right	26	11	37
Left	16	7	23
Number of Aspirations	—	29	29
Number of Hydrocortisone Injection	54	27	81
Reaction	19	0	19
Positive Lifting	19	0	19
Recurrence	10	0	10
Results:			
Well	8	14	22
Improved	30	0	30
Unimproved	0	1	1
No Follow-up	4	3	7

Recently an attempt has been made to interpret the "epicondylitis" as an intra-articular lesion of a synovial fold in the elbow joint, and removal of this fold has been advocated. Surgical stripping of the tendinous origin from the epicondyle has been used by some with favorable results. All our cases presented localized tenderness. In 18 out of the 36 patients in whom the precise location of the tenderness was recorded the tenderness seemed to be localized right over the lateral epicondyle. In three it was above it, and in 15 below it. In the two cases of medial epicondylitis the tenderness was right over the epicondyle.

All patients with lateral epicondylitis had pain over the tender area when the hand was actively dorsiflexed against resistance; in medial epicondylitis the pain was reported on forceful palmar flexion of the hand. This of course is due to the fact that all the dorsiflexors of the hand and fingers have a concentrated tendinous origin over a small area of the lateral epicondyle and all the palmar flexors have similar tendinous origin from the medial epicondyle.

We have been using what we called a "lifting test" as a diagnostic sign. The patient was asked to grasp an object about five to six pounds in weight and lift it with the forearm in pronation, by dorsiflexing the hand; then the same object was lifted with the forearm in supination, using palmar flexion motion of the hand. In lateral epicondylitis, of course, lifting with the hand in dorsiflexion was painful, while lifting by using palmar flexion of the hand caused no discomfort. The reverse was present in cases of medial epicondylitis.

Although hydrocortisone gave quite favorable results in many of our cases with epicondylitis, a rather severe reaction for the first day after the injection was noted in about 50% of our patients. This seemed to be decreased when we began to use only 0.5 cc. of hydrocortisone. In about 25% of the cases (10 patients) there was recurrence of symptoms after original relief for a few weeks

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TABLE VI.
HANDS AND FINGERS — 33 CASES

	Osteoarthritis of Fingers	Trigger Fingers (6 Pt's) including De Quervain's (10 Pt's)	Nonstenosing Tenosynovitis of Fingers	Nonstenosing Tenosynovitis Sheaths of Wrist and Hand	Calcific Tendinitis Wrist	Totals
Number of Patients	5	16	4	5	1	31
Number of Hands	6 (1 bil.)	17 (1 bil.)	4	5	1	33
Female	2	12	2	2	1	19
Male	3	4	2	3	—	12
Right	3	9	2	2	—	16
Left	3	8	2	3	1	17
Number of Hydrocortisone Injections	7	21	5	8	1	42
Reaction	—	1	—	—	—	1
Results:						
Well	—	7	—	—	—	8
Improved	4	7	3	2	—	16
Unimproved	1	2	1	1	—	5
No Follow-up	1	1	—	1	1	4

or even several months. Many of the recurrent cases were subsequently helped by additional administration of hydrocortisone. Olecranon bursitis is discussed under Bursitis.

V. Hands and Fingers

WE HAD nine finger joint patients who are analyzed in Table VI. Seven were improved (see osteoarthritis and tenosynovitis of fingers; under "tenosynovitis" are listed cases without stenosis of the sheath).

(A) TRIGGER FINGER:[9,10]

In six cases of stenosing tenosynovitis of the flexors of the fingers about 50% were improved; others were subsequently operated upon.

(B) DE QUERVAIN'S:

Our 10 patients with stenosing tenosynovitis of the extensor pollicis brevis and abductor pollicis longus seemed to respond better to local hydrocortisone injections than the cases with trigger finger. There were 11 wrists involved, one case of De Quervain's being bilateral. It is interesting that of the six cases of trigger finger and 10 cases of De Quervain's, there were 12 females and four males, nine right and eight left.

Our bilateral De Quervain's case was quite interesting. This patient, a young female, had an operative release performed elsewhere about one year previously on the right side with recurrence of symptoms. One month before the consultation she also developed typical symptoms on the left side. Both sides were completely cured after two injections of hydrocortisone on each side.

Our experience, although slight, with nonstenosing, nonspecific tenosynovitis, with effusion, affecting the sheath of flexors and extensors of the hand and fingers is likewise quite encouraging.

VI. Pelvic Region

A. CALCIFIC TENDINITIS:

Calcific tendinitis at the greater trochanter is homologous to the calcific tendinitis at the subacromial region. Acute onset without any obvious cause, limp, pain on motions, especially abduction of the thigh, localized tenderness, and roentgenological findings, make the diagnosis no problem. We treated with local injection of hydrocortisone three patients, two male and one female; two had right-sided lesion, in the other it was on the left. All showed improvement following an injection of 2 cc. of hydrocortisone into the tender area. On attempt at aspiration no calcific material was obtained.

One female with a very large calcific deposit in the soft tissues near the left ischial tuberosity, who suddenly developed extremely acute symptoms, responded dramatically to local injection of 2 cc. of hydrocortisone. We also were able to aspirate some of the calcific material. The follow-up roentgenograms one year later showed disappearance of the deposit.

(B) HIP JOINT:

Three patients, two males and one female, with osteoarthritis of the hip joint (two right, one left) each received one injection of 2 cc. of hydrocortisone intraarticularly from the anterior approach. One reported a temporary improvement; no follow-up on the other two.

VII. Ganglion

THE MOST common location of ganglion is around the wrist, mostly on its radial aspect, and on the dorsum of the foot. Surgical excision of the ganglion at the wrist is far from being a minor procedure.

Furthermore, we have seen permanent damage of the nerves and tendons at the wrist following attempt at removal of ganglion, and last but not least the postoperative recurrence of the ganglion is rather frequent even when performed by an experienced surgeon. Consequently it has been our policy for many years to treat a ganglion by aspiration of its contents under local anesthesia, using a heavy (15-gage) needle. This is followed by numerous perforations with the

TABLE VII.
GANGLIA — 14 CASES

	Foot	Wrist	Acromio-clavicular	Total
Number of Patients	7	6	1	14
Female	4	3	0	7
Male	3	3	1	7
Right	4	3	1	8
Left	3	3	0	6
Number of Hydrocortisone Injections	7	12	1	20
Results:				
Well	7	3	1	11
Improved	—	—	—	—
Unimproved	—	2	—	2
No Follow-up	—	1	—	1

point of the needle, made in the wall of the cyst. We gained the impression that this minor office procedure was just as efficacious, and the number of recurrences just as great, as when surgical excision was performed. Since the advent of hydrocortisone we began to inject 1 cc. of hydrocortisone following aspiration of the ganglion and before perforating its wall. We have a total of 14 ganglions: seven on the foot, in three males and four females; four right, three left, all of whom responded to first treatment. Six cases at the wrist, three male, three female, three right, three left, showed no recurrence after six months' follow-up in three cases. In three cases there was recurrence requiring repetition of the above procedure once, or several times. One male with a ganglion over the right acromioclavicular joint responded to treatment. In one female with a ganglion over the dorsiradial aspect of the left wrist this procedure was repeated six times within about one year before permanent cure was obtained.

Since our group of ganglia is rather small and since the recurrence may occur many months after the treatment, we are reluctant to make any definite conclusions. However, our present impression is that (1) ganglion on the foot is most responsive to the above therapy and should not be submitted to surgical removal; (2) ganglion at the wrist is quite prone to recur, therefore we advise our patients that they may need repetition of the same procedure; (3) in spite of this we feel that aspiration, hydrocortisone injection and multiple perforations are a definitely preferable procedure to surgical excision; (4) we are not quite sure that addition of hydrocortisone is of any definite value but it seems worth-while to give it further trial.

VIII. Bursitis

WE HAD a total of 27 cases of bursitis — 24 males, three females; two patients had bilateral prepatellar bursitis; 21 cases were on the right, eight on the left side. Approximately 50 aspirations (1.8 per patient) and 49 hydrocortisone injections (1.7 per patient) were performed. The smallest amount of fluid was 1 cc. and the largest 29 cc. Seven out of 13 prepatellar bursae had bloody fluid and four out of 12 olecranon bursae contained bloody effusion. According to our statistics the so-called "maid's knee" was twice as frequent in males (8) as in females (4). The right limb was more than twice as frequently involved (9) as the left (5) (Table II).

The prepatellar bursitis and the achillobursitis are included in discussions of the knee and foot respectively.

Eighteen cases of olecranon bursitis, 17 in males and one in a female, had 11 right and seven left involvements. They had 29 aspirations (2.6 per patient) and 27 hydrocortisone injections, 1 cc. (2.3 per patient). Fourteen were well; one had to be operated upon; no follow-up in three cases (Table V).

We had one male with lues and polyarthritis (also effusion in both knees) who developed serous effusion in the right subacromial bursa. It promptly cleared up after one aspiration and injection of 2 cc. of hydrocortisone.

Summary

THIS is a report of a study of 495 orthopedic patients (less than a dozen arthritic cases are included) who received a total of 941 local injections of hydrocortisone given in different locations of the limbs and torso. The first patient was treated on March 14, 1952, and the last prior to January 1, 1956.

The lesions at the knee and shoulder were the most frequently treated. As a by-product of this investigation a symptomocomplex which we considered "tenosynovitis" of the long head of the biceps humeri was noted in 37 patients (38 shoulders). It responded very well to local injections of hydrocortisone. Bicipital tenosynovitis was occasionally associated with an asymptomatic, "dormant" calcific deposit. In a few cases symptoms persisted following hydrocortisone injection into the "dormant" deposit; prompt relief was obtained after the injection into the bicipital sheath. Acute calcific tendinitis showed dramatic response to local hydrocortisone therapy.

At the knee, the impression was gained that some cysts of the semilunar cartilage may be amenable to local hydrocortisone injection with surgery either postponed or possibly even eliminated.

Hydrocortisone was successfully used in inflammatory and traumatic lesion of synovial cavities with effusion (synovitis of the joint, hemarthrosis, bursitis, tenosynovitis). A number of patients with stenosing tenosynovitis (trigger finger, De Quervain) were completely cured after local injections of hydrocortisone. This therapy is recommended prior to surgery.

From our experience we prefer multiple perforations and hydrocortisone injections in ganglion, and we are against surgical removal of gan-

glia. Epiphysitis of growth (Osgood-Schlatter disease, Frieberg-Kohler disease of the metatarsal head) responded spectacularly to hydrocortisone, and in spite of the very small number of our cases this therapy is recommended.

Hydrocortisone was found to be very useful in cases of "anterior metatarsalgia" and in variously located "tarsalgias." A number of "tarsalgias" were later diagnosed as gout, and they also responded promptly to hydrocortisone injections. Acute calcific tendinitis at the hip, knee, and hand likewise responded promptly to hydrocortisone.

At no time was any systemic reaction noted after administration of hydrocortisone frequently in two or three places at the same sitting (up to total of 5 cc. or 6 cc., 125 or 150 mg.). A transient local reaction was occasionally observed for a day or two; it was particularly frequent in cases of epicondylitis of the humerus, but it never had any untoward consequences. Although we had no infections, this complication has been recorded; meticulous asepsis is recommended.

Excluding 57 cases where there was no follow-up, a total of 466 limbs were followed up with these results: *well* in 128 (*27.4%*); *improved* in 283 (*60.7%*); *unimproved* in 55 (*11.9%*).

From our experience we believe that local injections of hydrocortisone used judiciously in properly selected cases are a valuable addition in treatment of various orthopedic conditions.

(501 West 50th Street.)

[We wish to acknowledge our thanks to Miss D. Divis, Assistant Medical Record Librarian of the Hotel Health Center, who helped to review records, assisted in our follow-ups, and computed our statistics. Her work is greatly appreciated by the authors.]

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What Every Physician Should Know

In the present day industrial society, some knowledge of occupational medicine should be a part of the normal equipment of every physician, the Joint International Labor Organization-World Health Organization Committee on Occupational Health declared. The Committee, which has just concluded its third session in Geneva, outlined the general knowledge every physician requires to take account in his general practice of the ever-increasing problems of modern industrial society and also the particular knowledge required for specialization in occupational health. The Committee was of the opinion that specialization in occupational medicine is at the same time a specialization of knowledge and a specialization of aims, objectives and interest. It is essentially a question of a method of approach to the investigation of the medical problems of individuals or groups and to their solution from the social and preventive point of view. The industrial physician should realize that the worker is at the same time a wage earner who needs his wage, a member of a social group, and a productive element in the factory. He should, therefore, not be unaware of the wide economic and social problems of labor which are all important for an understanding of the psychic and organic effects of work. He should collaborate closely with all those who, whether inside or outside the factory, are connected with the safety, health and welfare of workers. The report presented by the group of experts of the WHO and ILO contains a series of detailed conclusions on the knowledge necessary for occupational health practice, the teaching of occupational health, and on the role and organization of occupational health institutes. The experts have asked the two Organizations to encourage the teaching of occupational health. —*ILO News Service*, March 28, 1957.

Seven Thousand New Mouths to be Fed Every Morning

CAREY P. McCORD, M.D., Ann Arbor, Michigan

EVERY morning in the United States alone, 7,000 more mouths clamor for food than clamored yesterday or the day before. In a little while harried boards of education must find 2,555,000 new school room seats every year for these newcomers. The country's elementary and secondary school population of 38,000,000 of today represents an increase of almost 25% over just four years ago. A few more years ahead, hundreds of thousands of this unexpected increment along with their expected counterparts will be filling out industry's job application blanks. The situation is staggering. Such is the population trend at the moment in the United States. Many other countries are more grievously affronted by the world's population upsurge.

The Demographic Upset

IN THE April, 1940, issue of this Journal (*Indust. Med. & Surg.*, 9:4, 173), there appeared an article entitled "Industrial Workers of 1960." In that item two forecasts were made, namely, that by 1960 there would be (1) a distinct shift of medical concern to the older worker because of increased numbers and percentage; and (2) a waning birth rate so that in early decades thereafter only a small pool of younger workers would be available for recruitment into industry. The first of those items well has been fulfilled. The ensuing decades have seen the rise of gerontology, geriatrics, the emphasis on retirement, old age pensions, and employment of the senior citizen. The second portion of the prophecy has confounded all the prognosticators. The mentioned article, well documented and conforming to the trends of the period like many another, was surrounded by an insufficient number of "ifs."

The major unexpected "if" was "war." In wartime, in any uninvaded and little burdened land, birth rates consistently have risen. Promptly this came about in the United States even during the years of imminence of war and more so in the years of actuality of war. Then another fallacy came into prominence. Widely it was asserted that the startling increase in the birth rate was a passing phenomenon of war, and that a reversion to the expected pattern would appear soon. A trite comparison entered the predictions. It was said that the population curve ever would present a permanent bulge as though a snake had swallowed a hen's egg intact. A better figure in a hindsight view would have been that the snake had partly swallowed a sizable boloney sausage and at this writing a sizable portion is still outside the snake's mouth.

The New Trend

NOT YET has 1960 arrived. Even now it is possible to anticipate population situations for some decades ahead in terms of present trends. This time an unlimited number of blank "ifs" here are interposed just in case.

The total mass of humanity is trifling compared to the earth itself. Long ago, Hendrik Van Loon, in his "Geography," stated in better words than these that if it were possible to construct on the brink of the Grand Canyon a huge packing case, one-half mile cubed, then within it, neatly might be stacked away every man, woman and child on earth at the time of his writing. Then, with the lid deftly pulled in place from the inside, a little rocking might topple this human carrier to the bottom of the Canyon. There, just a few years later, the only residuum of the human race would be a bright green spot in the depths below. Such is the ratio between man and the earth on which he lives.

Perhaps it is deplorable that that Van Loon conception was not put to accomplishment, viewing man as the earth's least desirable occupant. Be that as it may, as to desirability, the cogent fact is that the opportunity is passed. The Van Loon box is not now big enough. The earth's population as of 1957 approximates 2,700,000,000. Fifty years hence that population, in the figures of the most liberally calculating demographers, may have spawned to an appalling 20,000,000,000, more than a seven-fold increase. In the United States, no pace-setter in the matter, the present population of about 168,000,000 by 1975 may have increased to more than 193,000,000, and, by A.D. 2000, to the awesome figure of 320,000,000. No great increase over the present annual birth rate of 25 per 1000 may provide just such number.

Earlier it was proclaimed that by 1960 some purveyors of marketable goods would be more

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interested in rubber seating rings and wheel chairs than in teething rings and perambulators. The new situation may be epitomized in the statement that just ahead these purveyors will be concerned with all these wares. Both the young and the old in vast numbers are to be in the population midst. The nation's dilemma is that of the family joyously awaiting a new arrival. All is in readiness. Then quadruplets arrive; and all is consternation. This country was not ready for its

More Humans at the Expense of Other Life

ANY MASTERY in terms of number by any one life form usually is at the expense of some other life form. The more wolves, the fewer deer. It may appear fantastic to claim that there is a connection between human overpopulation and the horse population of Indiana or the mule population of Texas or any other state. Yet, a connection may be traced, albeit not a conclusive one. Until recent decades, one-half of what the farmer raised went to the feeding of his working livestock. As a consequence the average farmer could be expected to feed only nine persons besides his family. Now, with the livestock unborn, that same farmer may feed 15 others, and, if pressed, many more. The equine population decline foremostly was not in deference to hungry humans. Man, quite unwilling to impose birth control upon himself, achieved birth control for his working animals almost to the point of annihilation. Gallantly the horse is making a colorful last stand at the race tracks. With bawdy intent one male viewer from an office window yelled to a companion at his desk, "Over here, quick! Here comes a naked woman riding a white horse!"

"Make way for me," was the reply. "I haven't seen a horse in ages."

Ribald as are the implications, a sage demographic observation is involved. The rarity of equines to be viewed remotely relates to the fact that more persons are about.

The fundamental reason for the curtailment of farm stock breeding is gasoline and the machines it powers. The "one-horse farmer" decades ago spent five hours in the production of a bushel of corn. Now, thanks primarily to gasoline, only four minutes of the farmer's time is required to produce a bushel of corn. Similar figures apply to all farm produce. Machines and mules account for those tremendous surpluses of this nation, constituting political and economic plagues for both the "have and the have-not countries." Yet, it is to be minded that near starvation appears to be as much an incentive to overpopulation as plenty. Some countries living on a mere subsistence diet are prolific in contribution to overpopulation.

Can the U.S. Support a Doubled Population?

OF HIGH pertinency is the question whether in the United States it would be possible to provide for an enormous increase in population such as the new projected 320,000,000 in A.D. 2000. Without any regard at this time to the advantages and disadvantages, the rightness versus the wrongness of high populations, the answer, save in a few respects, appears to be in distinct affirmation. Food, clothing, and fuel appear to constitute no barrier, although costs may mount tremendously. Threatening vast air pollution can be controlled. The crucial deterrent to huge population expanse is water. Even now water shortage is a staggering handicap to industrial expansion. This is not merely a matter of enlarging present water facilities. Basically, water itself just does not exist in quantity sufficient to mounting potential demands in many areas. With a 320,000,000 total population, Indianapolis, as a possible example, may be four times its present size. Indianapolis may find itself pumping its water supply out of Lake Michigan. If a hundred other water-hungry inland cities near the Great Lakes do the same, the St. Lawrence River may become a trickle and navigation on the much vaunted St. Lawrence Seaway may stop with tidewater. Fantastic? Granted, but the entire situation is fantastic. It is not wholly a fancy that the Mississippi River may be consumed dry by thirsty industry and thirsty humans, leaving New Orleans on a stream the size of the Wabash, or else leaving it on the world's biggest sewer.

The Menacing Lag

CONCEDING opportunities in the United States for the absorption of many new millions of persons, devastating handicaps may arise in terms of timing. Educational agencies already are being bowled over by the immensity of demands. There is no adequacy of teachers or space. Yet there stand the children. The present-time yearly increase of population of 3% runs ahead of the yearly 2% increase in facilities and products (farm products excepted). It is easy to say, "By the time there is a need for more water, someone will have come along with a practical economic method for making sea water potable and industrially suitable." Already the need has arrived but not the method. A great national snarl lies ahead in the possible lag in turning admitted potentialities into actualities.

At the 1956 sessions of the American Association for the Advancement of Science, one authority's address provided this comment:

"Dr. Harrison Brown, Professor of Geochemistry at the California Institute of Technology, expressed faith in the ultimate ability of man to increase the world's industrial output to 1,000 times today's output and to provide food sufficient to feed 50 billion persons.

"Nevertheless, Dr. Brown was worried about the rate at which this productivity can be increased.

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"In spite of huge efforts in various areas of the world, he said, it has been found difficult to increase food productivity at a rate much faster than about 2% a year.

"When we couple this with the fact that populations can increase at rates which are as high as 3% a year and with the additional fact that the vast majority of the world's people are already hungry, the prospects are far from cheery."

An unnecessary population explosion could be the result of industrial procrastination.

Why this Population Upsurge?

THE demographers coldly go about the detection of population trends and facts. Only exceptionally do they indulge in explanations of shifts upward and downward. A mere handmaiden to the demographers, such as this writer at best is, has far less warrant for speculation as to causations. The motivations in part are deeply rooted in human emotions, religion, marital customs, social security, and public health achievement. Yet some causes seem obvious.

In the decades of less than half a century earlier and theretofore, the honorable young man was apt to be ruled by fierce determination to make his own way, and particularly his own marital way. He said to himself, and aloud, "When I am able to support a wife with my own efforts, then I shall lay my achievements before some adored woman and hope for marriage." So he toiled ceaselessly and one fine day, near age 30, the great moment came. Nowadays, that young man, aided by mama and papa—who themselves are better off than their own grandparents—sees no reason why he should not be married at 21 or thereabouts. Or, guided by a different idea of the honorable than motivated his grandfather, he marries at 21 so that his competent wife may work his way through the university. Add to that the ready moneys from government in appreciation of military services, prolific scholarships for education, higher wages from employment. The added total means earlier and more families; longer periods of procreativeness; more security; a lessened sense of individual responsibility. We are in the throes of all that. So the possible exploding population.

The real villains, or the real heroes, depending on the point of view, are the public health worker, the sanitarian, the physician, the engineer. They are the ones who have lessened infant mortality, decreased infertility, lowered death rates, increased birth rates. The cruel part of nature long exercised its own rules for population control. If quickly all public health workers, all physicians, and all their like should be destroyed, together with their installations and their records, then in two days time the start toward underpopulation would have begun. In two days time the first of the cases of enteritis from untreated water supplies would have started and within a year typhoid fever, along with other epidemics, would have ravaged every county in the United States.

Perhaps the worst charge that might be made against Britain in India is that she destroyed nature's balance between birth and death rates. Of that, Edgar Mowrer (*Saturday Review*, 39:11 (December 8) 1956) has this to say: "India's population, thanks to a high death rate, remained virtually stable for two or three thousand years prior to 1850 — and the country was well fed and prosperous. Since the British cut the death rate the number of Indians has zoomed skyward with no promise of relief."

Is a Vastly Increased Population Desirable?

TO THE minds of some, there is no right and no wrong; only the will of the Gods. In the United States, some advantages would derive from a doubled population, some disadvantages. In much thinking the disadvantages far outweigh gains. Inherent in human wants is the desire for the biggest, the most, otherwise there would be no Chambers of Commerce. The corner grocer is all for bigger population — more customers, more sales, more trading stamps. The filling station operator is delighted with every prospect of widened city limits, more gasoline, more pumps, more accessories. He wholly is unconcerned over that early day when there may be no more gasoline to pump. Contrawise the rancher, who will be called upon to provide twice as much table meat as now, already is shrieking that his ranges are being turned into city lots. A huge new population addition will impose a great many sacrifices. For many, a doubled population will mean a gigantic den of horrors.

This country was created as a republic. It became a democracy. With the difficulties from anything like a 320,000,000 population, it may be doubted that we can afford to be a democracy. Dictatorships grow out of human congestion. Even now it may be denied that we are ridden by a governmental dictatorship. Inevitably human congestion will mean more regimentation, more regulation, and inescapable homogeneity. Italy may in its past have produced the world's greatest sculptors, painters, musical artists and composers, and some of the great writers. With the exception of vocal artists, this was accomplished at a time of lower population. Compared with its own past, Italy's present cultural output is of low order. Obviously it is merely foolish to attribute this to population density, but that may be one factor. New England had its golden era of literature at a time of low population levels. Yet it is conceded that other portions of this country with sparse population levels have produced nothing of cultural account. On that point the *Detroit Medical News* observes: "One of the basic corollaries

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of the increasing overpopulation of the world is that potentially brilliant students may not have the educational opportunities commensurate with their abilities. Individuals of superior intellect may be engulfed in the great masses and some clever persons may be outmaneuvered in the rivalry for employment, recognition or advancement by the sheer numbers of competitors. Occasionally these impediments make the struggle exceedingly difficult. A sense of frustration is not unknown.

"The opinion seems to prevail among some educators, psychologists, and a few others that to be submerged in a social group is better social adjustment than to have individual initiative, marked ability, or exceptional intelligence; that orthodoxy is more desirable than heterodoxy. Considerable importance is attributed to the large homogeneous masses of people, all of great similitude. . . .

"The few intellectuals who emerge have to pay an exhorbitant price for their nonconformity. They are sniped at from all angles by lesser men. Creative imagination and scientific curiosity are out of harmony with the drab uniformity that seems to be creeping over the world.

"The emergence of the multitude is not conducive to progress, particularly when projected into the future. The necessary intellectual leadership is deficient in such a milieu. Our contemporary progress has not been made because of unique opportunities in education but in spite of a system aimed at the lowest common denominator of learning ability or intelligence. This pragmatic approach to the problem may not be the most acceptable to all educators but in view of the limited resources of the teaching profession there seem to be but few alternatives."

What This May Mean to Industry

THE ultimate objective of this comment has been to extrapolate as to the manpower reservoir in the decades of the next two generations. Will there be sufficient jobs for all needing employment? Will there be a numerical dominance of the work force by any one group — the young, the old? Will there be sufficient number of workers to meet the labor demand?

Assuming that by A.D. 2000 this country will have nearly doubled its population, that event will mean that the industrial output must at least double, and in orderly fashion have kept step decade by decade in the interim. Twice as many factories or factory space; twice as much food produce; twice as many shelters; twice as much fuel, and with it the banishment of significant air pollution. If the United States is to become the great purveyor to the world, as in no mean manner it already is, then a twofold production increase will not suffice. Brown's statement that a thousandfold industrial output increase is possible — staggering as his claim may be — may have to be heeded. None of that provides comfort to any prophet of doom. It is not possible to foresee any dearth of employment anywhere ahead, full automation or no. Yet a proviso later is injected.

At present, the percentage of older men and women physiologically and anatomically able to work, is, in this country, higher than for any previous period. The number likewise is higher but the situation is confused by the workings of early enforced retirement, pensions, easy security. Soon now will come the time when the products of the "baby boom" of the "breeding forties" which continue uninhibited will reach the work age. Then the percentile shift will be toward the young ones. Since the entire spawning population increase (disregarding immigration) always must pass through youth (until the unforseeable stable population is reached), unfailingly there will be a youthful hump in the labor pool.

Lastly in this series of academic questions comes the one dealing with adequate numbers of workers to meet the demand. With population at present rates increasing by 3% per year, people are running ahead of the pack of all measures (save farm produce) promising comfortable adjustment to this horde of newcomers. There comes the dilemma. Already it has been asserted that the demands to be made upon industry will tax all industrial capacities. Thus, sufficient jobs and sufficient workers. But much depends on industry's tempo. If industry lags there may be a devastating surplus of workers threatening the entire economy and requiring all manner of readjustments within the labor force. For a period, mandatory retirement at some age near 50 becomes thinkable.

Summary

THE United States faces an enormous upward surge in population, which increase already is well under way. By A.D. 2000 the population may have reached 320,000,000. The current yearly increment is at the rate of 3%. As to resources, this country may meet the demands of many added millions for food, shelter, clothing, and fuel. Insufficient fresh water will constitute the greatest handicap. Already water in many regions is in short supply. The brunt of adjustment to a doubled population will fall on industry. Doubling of industrial output by the end of two and a half scores of years appears inevitable. More factories, more jobs, more workers are all just ahead. Enormous developments and expansion in occupational health measures must be faced quickly, but not hastily.

Programs for Weight Reduction in Industrial Groups

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ANNUALLY the statistical summary of the physical examinations on more than 1,300 of our supervisory employees is carefully recorded. Although practically all of the significant diagnoses have been investigated adequately, it appears that the prevalent affront of obesity rarely has been suitably controlled. The results of well controlled studies indicate that obesity usually ranks either first, second, or third in the analyses of medical diagnoses. Hypertension and cardiac disabilities, which are the most prominent competitors with overweight, frequently are controlled following referral to the personal physician. The management and control of obesity has been a chronic disappointment in the health maintenance program of our company.

Why Group Therapy

OWING to the influence of cooperative enterprise in all our thinking, or, impressed by the results of well established precedent in such diverse fields as Alcoholics Anonymous or group psychotherapy, it appeared that the group approach to the problem of obesity deserved attention. Many private physicians, nutritional clinics, and diverse medico-social agencies have, in recent years, made valuable contributions to the success of group approach to the overweight individual.[1,2]

It was our impression that in dealing with "management" people, we were involved with a specific problem. Some industries have faced the situation and evolved the educational approach of a planned "executive diet," and sometimes the experience of the athletic training table has been modified, with the adoption of a special diet menu in the company dining room or cafeteria. As praiseworthy as these efforts have been, the results have not always satisfied its organizers. In our experience there seemed to be lacking a driving force which is so essential.

The thought that overweight is a physical handicap with many serious prognostic consequences can be relatively easily instilled into any intelligent individual or group of people. Conviction through actuarial statistics or the fear of inevitable physical consequences, based on prior history or experience, is relatively easily seeded in the minds of our patients. However, the transition from a generalized conviction to a practical and personal deduction of possible consequences is another story. Whatever logic is employed, it is a fact that positive action rarely followed conviction, when it meant a regimented and continuous dieting effort in the struggle to lose weight.

What seemed to be present in the group approach of management representatives in industry was a common spirit, i.e., the realization that fellow employees of equal stature had the same difficulty and were willing to meet together for a common solution. These "patients" were accustomed to a "conference" approach in facing any production problem. It was relatively easy to correlate this experience to a new realm of common interest, i.e., their own personal health.

Organization

FOLLOWING the above reasoning, it was not difficult, through personal communication, to find a surprising response to an offer to conduct weight reduction classes. A majority of the supervisors consulted expressed a willingness to join a group devoted to a program for weight reduction. The invitation was personal, and no effort was used to persuade them on the basis of physical consequences. All that was asked was a determined effort to follow a prescribed number of group discussions on weight reduction. The physician acted as a group leader, offering some didactic information and then receded to the position of a counselor as situations developed following his factual presentation. The desired number in any one group was generally held to be six members. Larger groups, it was feared, might lose the effects of intimacy of purpose. The classes convened weekly for four weeks, biweekly for two months, then monthly for a minimum of six months, a total of 14 meetings.

It has been our belief that the usual approach to the state of obesity is not psychologically sound nor based on an understanding of human nature with its innate and acquired habits. The sudden transition from the custom of eating "ad lib"

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to one of rigid caloric regimentation is tantamount to establishing a state of "psychological shock." Busy industrialists find it almost impossible blindly to submit to a strenuous diet, not because they cannot subsist on 1200 or 1400 calories, but because they adapt poorly to restricting menus. Employees who have been living recklessly on food consumption must be weaned from their excesses and taught a new standard of nutritional values. Their re-education, using new criteria, must be gradual, if it is to be permanent. Normally a patient is "put on a diet," which implies that someday he is going to "get off" his diet. Where this happens, it is only a matter of time before he returns to his former eating habits. If, however, the group is indoctrinated in a new way of living (nutritionally), it is possible to make the transition gradually. The training period can be extended to cover six months or more with the hope that by this time his acquired new habits will become permanently established. The best criterion for success is that patients once reduced, stay reduced.[3]

Procedure

IT HAS been our experience that the majority of people attempting weight reduction have profited by the use of some appetite-appeasing drug. However, selective medication becomes difficult in industrial group therapy because of the differences in physical status of individuals, and the fact that work efficiency must not be impaired. Through prior or acquired experience our subjects had expected to receive the help found in medication. We had a serious responsibility to (1) make them appreciate the type of assistance they would receive from drug therapy, and (2) be reasonably certain that there would be no side reactions from any combination of drugs which would interfere with their working efficiency. All employees accepted in weight reduction groups were previously examined to make sure that they could safely undertake a regimen of dieting.

Preliminary trials, using a combination of methamphetamine hydrochloride — 10.0 mg., and phenobarbital — 65 mg., provided acceptable appetite suppression without any side reactions. This combination was found in Ambar* Extentabs. One or two tablets a day lead to a definite suppression of appetite. The blood pressure was carefully recorded at every visit, and no influence of the central nervous stimulant (methamphetamine) was observed; elevation of systolic blood pressure did not occur.

Our approach started with a discussion of eating as a "habit." From a study of personal eating routines it was possible to draw a convincing conclusion that the members in any group were eating impulsively through habit and most of these habits were bad.

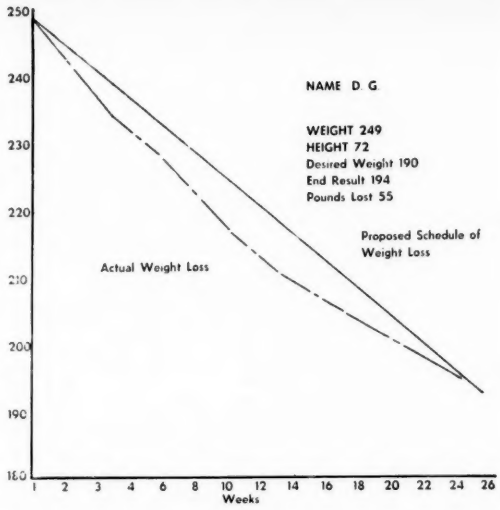

Fig. 1.

Every member concentrated, during the first two weeks, on the elimination of varied significant bad eating habits. Subjects were advised not to alter their diets basically but to concentrate on the removal from their eating practices of the superfluous foods that were regarded as significant weight producers.

As each member followed this plan, he found (usually much to his surprise) that during these two weeks he had lost weight. This is an important psychological turning point in self-conviction. All were convincing themselves that (1) they were over-eating unnecessarily and thoughtlessly through habit, and (2) they could eliminate the bad eating patterns without any appreciable distress. From this came further conviction that they could alter their basic eating customs if they received proper direction.

Dieting by Choice

BEING receptive to changing their customary eating practices, they then spent two weeks (or three) adapting themselves to controlled food consumption. During this time, the group leader has been formally presenting precise nutritional information on which they could predicate their new eating regime.

Thus, by the end of the first month, each supervisor was committed to a well-regulated diet which he himself had designed. The physician was watching carefully to see that the diets were moderate but sufficient to supply all essential food elements. Through prior measurements and analysis of individual physiques, an over-all program had been planned for each person. They were led, without full realization, into a caloric intake practice that conformed to

* A. H. Robins Company, Inc., Richmond, Virginia.

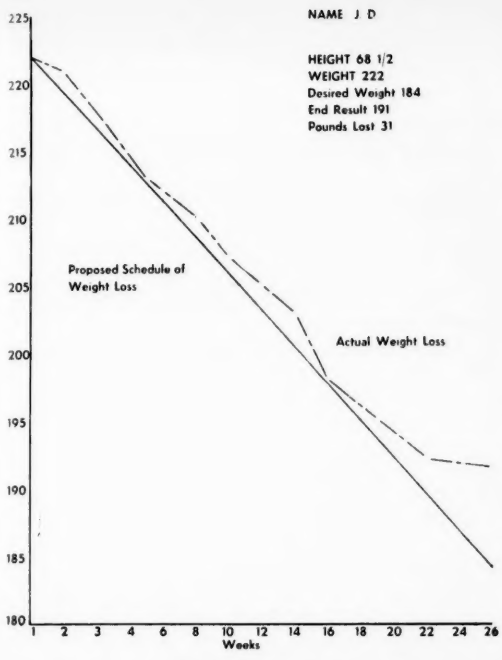

Fig. 2.

individual requirements. Charts were prepared and presented at each meeting indicating how well they were following the preconceived plan that would bring them to a desired goal usually in about six months (Figs. 1 and 2).

Because of the intellectual level of our membership, it was essential that there be continued motivation through reasoning rather than by inciting fear or tiring flattery. Hence our physicians supplied an outline of interesting sidelights to the problem of obesity that spurred questions and renewed interest in their project. Such topics as (1) metabolism (B.M.R.), (2) specific dynamic action of foods, (3) appestat, i.e., influence and control of weight by the appetite center of the hypothalamus, (4) influence of heredity, (5) effects of endocrine activity, (6) psychological influence and personality traits relative to obesity, and other miscellaneous subjects were covered in an effort to round out their course.

Results

THERE is no empirical formula by which the success of a weight reduction program can be measured. This is not the most important aspect of our efforts in this work. It is much more important that we indoctrinate these patients with a thorough conviction that every pound reduced must remain lost.

Using established criteria in an effort to evaluate the efficiency of the group program in industry, we first measured the results by the Trulson[2] formula. Patients were regarded as having been successful if they lost the minimum number of pounds for their respective weight group. A person is considered as unsuccessful if he has failed to lose a minimum of five pounds after four months. None of the supervisors in our groups lost less than 11 pounds. The maximum number of pounds lost was 78. Accordingly 38.7% of the patients achieved success after an average follow-up of six months.

TABLE I.
THIRTY-ONE PATIENTS ANALYZED USING TRULSON CRITERIA

Initial Weight Range	Patients in Group	Successful	Average Weight Lost
150 or less	0	—	—
151 to 175	2	2	19
176 to 200	10	2	16.4
201 to 225	9	4	24.4
226 to 250	6	3	34.1
Over 251	4	1	37.2
	31	12	
		38.7%	

Weight loss in pounds. Using this criteria of weight lost per individual you get another view of the success of the program. The percentage distribution curve confirms the previous analysis that all of the patients were striving to lose weight since none fell within the lowest group (less than 10 pounds).

TABLE II.

Weight Loss	Number of Patients	Percentage Distribution
None or gained	0	—
1 to 9 lbs.	0	—
10 to 19 lbs.	15	48.4%
20 to 29 lbs.	7	22.5%
30 to 39 lbs.	5	16.1%
40 or over	4	13.0%
	31	100.0%

Percentage of excess weight lost. This is perhaps one of the best rulers to measure the efficacy of effort put into a weight reduction program. It is not expected that many will reach the goal of their ideal weight. It is possible to get a good view of the over-all success from this analysis.

TABLE III.

Percentage of Excess Weight Lost	Number of Patients	Percentage Distribution
Over 80%	7	22.6
61 to 80%	7	22.6
41 to 60%	10	32.2
31 to 40%	5	16.1
21 to 30%	2	6.5
0 to 20%	0	—
	31	100.0%

The success of the program becomes more evident when it is noted that 77% of the supervisors were at least 40% successful in their drive toward the ideal weight. Only 6.5% could be regarded as failures. Of the seven supervisors who were less than 40% successful, two of these men were transferred to distant loca-

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tions where they could not continue with their group sessions. The over-all results justify the time and effort being put into this program.

Summary

GROUP discussion classes on weight reduction are uniquely adaptable to industrial medical practice. There is a realm of mutual interest and motivation that is not ordinarily found in other fields of group therapy. Our executive groups were not put on a diet, but were gradually led into a form of living that adjusted their eating habits to sensible nutritional demands. Our experience showed that use of an appetite-appeasing medication was helpful in the weight reduction program. Statistically, results exceeded expectations based on prior experience.

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AIHA Hygienic Guide Series

W. E. McCORMICK, Chairman, Hygienic Guides Committee

FOR a number of years an unfilled need has existed for concise information which can be made available readily to professional and nonprofessional industrial hygiene personnel on hygienic standards. Various maximum allowable concentration values have been suggested and, in many cases, established, by health agencies. The annual values published by the American Conference of Governmental Industrial Hygienists have been generally accepted as the best "bench marks" available, but the bases underlying individual suggested values are unpublished.

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Arsine	Fluorine	Ozone
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Cadmium		Zinc Oxide

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These Guides have proven exceptionally valuable to physicians, plant engineers, nurses, industrial health personnel, and safety personnel. Orders for them are being constantly received, not only from United States sources, but from many foreign countries. They serve as a concise reservoir of information on the physiological characteristics, the basis for maximum allowable concentrations, and the evaluation and control procedures. It is planned to continue the development of Guides on other materials, in regular issues of the *AIHA Quarterly*.

Traumatic Neurosis

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EVERY time the body suffers an injury, there are concomitant emotional effects. Because the emotional effects frequently exceed the physical damage and sometimes are the only remaining vestige of the injury, the lawyer is being more and more forced to seek the aid of the psychiatrist and the psychologist.

Every person has a certain quantity of mental energy which he tries to maintain at its peak operating capacity. If his energy is depleted, he cannot function at high speed. The man who has played 60 minutes of hard, rough-and-tumble football is not able to begin immediately to play a fast game of basketball. In the same way, a man's stock of mental energy may be depleteed when he is wrestling with a serious conflict in his life. He uses a large percentage of his energy in attempting to solve it. He may then find himself overwhelmed when he is faced with an additional problem which requires an even greater expenditure of mental energy.

Let's take an oversimplified case in point: A man is struggling to keep his head above water financially. His rent is being raised, he is getting work only three days a week, his wife is about to give birth to a fourth child — and three kids raised enough racket as it is. Our hero then has an industrial accident and suffers a fracture of his arm. This injury becomes the final straw. In order to adjust to the shock of the injury and the resulting physical disability, he is required to muster some energy which simply is not there to be had. It is bottled up elsewhere. So what does this man do when the fracture has mended and the doctor has discharged him as able to return to work? He had been protected by the physical helplessness which the fracture imposed upon him. It is impossible for him now to accept the medical conclusion which would return him to his same desperate plight. He defends himself by unconsciously developing neurotic symptoms. Like the soldier overwhelmed by the bursting of mortar shell after mortar shell, he runs out on life. He is unable to face the reality of his problems. It is less painful for him to believe that he has pain in his arm. This localizes his troubles to a single cause and makes him the helpless victim of a capricious fate. "If only my arm would heal," he thinks, "I would be able to take care of my family."

How does a man with a traumatic neurosis look to us when we interview him in the office for the first time? Does he wear any labels on his lapel? It is my firm conviction that a great many traumatic neurosis cases are missed, avoided, sent away, or summarily disposed of by lawyers because of their failure to recognize them. It is the exception, rather than the rule, if the neurosis has been diagnosed by a physician prior to the lawyer's contact with the client. Thus, if the attorney fails to appreciate the possible psychiatric implications, he will frequently not have the traumatic neurosis case to try at all. I would like, therefore, to describe twenty signals, any one or a combination of which should raise the following question in the mind of the lawyer: Should I refer this client to a psychiatrist for an evaluation?

Usually the lawyer will receive from the neurotic at least several of the following signals. He should then be careful to refer the client to the psychiatrist and not himself try to act upon his inadequate knowledge of the subject.

Inappropriate Response or Affect

SIMPLY defined, inappropriate response or affect means that the client responds to a situation in a way that seems unusual or peculiar to you. The client has a smile on his face when he describes a very sad situation. For example, a woman client had sustained a back injury. She had been to a number of doctors. All the doctors, with one exception, could find no organic basis for her complaints. He told her that she was suffering from multiple sclerosis. She was then examined by one of the outstanding authorities in the country on multiple sclerosis who conclusively ruled out that disease. She subsequently was told that she did not have multiple sclerosis. She exhibited no joy, no surprise, no emotion of any kind whatsoever. I termed her response to this news inappropriate affect inasmuch as she was fully aware of the terrible nature of the disease; and she was further aware that, if she did have multiple sclerosis, it would seriously impair her chances of winning her case. Since other doctors, however, could find no physical basis for her complaints, it was obviously necessary for her to hold on to the diagnosis of multiple sclerosis. Without an organic explanation for the pain, she would have been forced to face her more serious problem which had been sidetracked by the development of a neurosis.

Personality Changes

ALTHOUGH there is no unusual behavior observable in the office interview, the client gives a history which indicates that, since the accident, his personality has changed. Examples of such personality changes, which are not unusual in a traumatic neurosis case, are as follows: The client tells you that since the injury he has become irritable or tense or nervous; that he has begun to drink, or drinks much more

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heavily; that he has frequent nightmares, reliving the details of the injury; that he has developed insomnia. He has become withdrawn, silent and moody; has developed violent fits of temper; there has been a reversal of some personality trait; the aggressive personality becomes a dependent one, or vice versa.

Bizarre Symptomatology

THE CLIENT gives a history of some kind of bizarre symptom which you know is not usually associated with the type of injury received. For example, a male client had been operated on for an umbilical hernia. Following the operation to repair the hernia, he advised me that, when he had intercourse, he often had a bloody discharge. Such a symptom, of course, would be extremely unusual. Furthermore, it never seemed to occur to him that perhaps his wife might have been menstruating during that time.

Metastasis of Symptoms

FREQUENTLY the neurotic client extends his complaints to an area larger than that which has been injured. To exemplify this, here is a hospital record: "28 year old male states that he splashed stencil dies in his right eye on February 15, 1954. Stencil contains naphtha. Washed it immediately. Sent to Dr. Witter's office morning of February 16, 1954. Drops put in eyes. Headache had started previous to this night of February 16, 1954. Began having aching in right shoulder, down right side and thigh to knee. States when he stood, right side just gave way. Had numbness on right side.

"February 18, 1954. Complains of pain in right shoulder and back of neck on right side. Continues to resist use of right arm.

"February 20, 1954. Patient states that the weakness and numbness has now extended down to right leg. The whole right half of his body is now apparently involved. Still had headaches and feels 'drunk.'

"February 21, 1954. Patient complains of severe chest pain. States it is sharp. Denies any radiation. States it feels like a stabbing with each heart beat making him short of breath. Has never had any such pain previous to such episode. Patient given codeine and within five minutes stated: 'It feels like the top of my head is blowing off.'

"February 21, 1954. Patient states his shortness of breath is worse. After being given medication, within ten minutes began complaining of severe pain in neck. Pain in neck was followed in few minutes by complaint of earache on left.

"February 22, 1954. When leg is raised from bed, it remains extended in the air. Yet he states he cannot move it."

This client had a superficial injury to one eye. Eventually he developed symptoms in both eyes, fainting spells, dizziness, blackouts, fatigue, trouble with his entire body. We find the neurotic, frequently, developing additional symptoms out of all keeping with the actual injury.

Lawyer to Lawyer

ALL OF US have had the experience of interviewing a client who has been to one, two, or three lawyers prior to our contact with him. The lawyer's usual reaction is to attempt to avoid the situation. We recognize that a client who is unable to get along with previous lawyers might very well be unable to get along with us. It is, however, not unusual for a man suffering from a traumatic neurosis to drift from lawyer to lawyer for any one of a number of reasons. One reason is the failure of the lawyer to recognize that the client has a neurosis. It is true that the neurotic often is very difficult to get along with. For the same reasons that he is unable to function adequately in all interpersonal relationships, he finds it impossible to cooperate fully with the lawyer in the management of his case.

But, frequently, the lawyer promotes the antagonism of the client. After the lawyer has received a negative medical report from his orthopedic surgeon or his general practitioner, he begins to suspect that since there is no organic basis for the client's complaints, the man is pulling his leg. Natural suspicion on the part of the client plus incredulity on the part of the lawyer promote misunderstanding, strife, and frequently lead to the termination of the attorney-client relationship. Thus, the fact that the client has been to several lawyers prior to your contact with him does not necessarily mean that there is not a good case. You should begin rather to investigate the possible psychiatric aspects.

Doctor to Doctor

IF YOUR client tells you that he has seen a number of doctors, you might begin to suspect the possibility of a neurotic involvement. As the neurotic will tend to flit from lawyer to lawyer, he may use doctors in the same way. The doctor who is unable to find a physical justification for the patient's complaints will tend to slough him off. The neurotic patient will, of course, become antagonistic toward such an attitude on the part of the doctor and seek other medical attention. An extreme example of this was a woman client with a traumatic neurosis who had been to 46 different doctors in regard to her injury. She also had been hospitalized on nine different occasions. Excessive seeking of medical attention is frequently in and of itself a signal to the lawyer to arrange for the client to see a psychiatrist.

Accident Proneness

THE CLIENT should be carefully interviewed as to any claims or hospitalizations relative to prior accidents. If he tells you that he has had a number of previous accidents and claims and settlements, this fact may indicate the need for possible psychiatric evaluation of the case. The professional litigant, of course, will never discuss with his lawyer, freely, previous claims and settlements, whereas the neurotic frequently will wish to talk at length about previous injuries. This, then, may be a useful means of distinguishing between the professional litigant and the possibly neurotic client.

There may be, of course, another significance in a history of successive accidents. Accidents may serve a special function in the psychic life of a client. Frequently the person who tends to have accidents is acting out unconscious needs to punish himself and thus relieve himself of guilt feelings. If a man must go to such ends, he is obviously emotionally ill.

A client comes to mind who had had five prior injuries and five prior settlements. Actually each injury, and the compensation received for each injury, helped to establish for this man a certain pattern which became necessary, unconsciously, for him to follow.

Garrulousness

EXTREME garrulousness may indicate a disturbance in a client. He insists on talking much beyond the usual range of client talk, and wanders from fact to fact. He desires to discuss many things which are entirely unrelated to his injury. Why does a client do this? The neurotic often uses a lawyer for more than the actual law suit: He uses the lawyer as a doctor and a minister. He wants someone to listen to him and to believe in him. He needs to justify his cause in order to ward off the doubts that lurk in the shadows of his own mind.

Proving Something

FREQUENTLY, it becomes apparent during the course of the interview with the neurotic client that he is not primarily interested in the money to be obtained through the lawsuit. Discussion of settlement may reveal that the client has exorbitant demands, or he is not interested in any kind of a settlement less than his full claim. Sometimes only an outright adjudication of his rights will appease him. The lawyer should investigate the client's attitude towards settlement to determine whether the client wants, mainly, to prove that he is right and is seeking for the court, the jury or some authority to establish formally his being in the right. This, of course, is directly related to the above described need to justify his cause.

Particular Stress Situation

WE FIND that an individual at a certain time in his life is much more susceptible to the development of a traumatic neurosis. Examples of periods of particular stress are: adolescence; shortly after marriage; shortly after the birth of a child; during a separation or during divorce proceedings; the involutional period; following the death of a close relative or friend. We have previously described the dynamics of the economic theory of energy. The woman in menopause, for example, is devoting a considerable amount of her mental energy to the problems of menopause and the end of her youth. If she suffers an accident during this particular poignant period, the amount of free mental energy at her disposal may not be sufficient to meet the demands of the additional straw, the accident.

The following is a psychiatric report of a woman who was in menopause at the time of the injury sustained. "The patient is a 40 year old white female appearing somewhat younger than her stated age. She related that in September, 1952, she started a job which required her to bend over and walk along an assembly line in this position. She held the brake tubes on which she was working in her left hand and the wrench, which she used on them, in her right hand. She first noticed a lump in her left breast some time between the spring and July in 1953. It should be noted that in her work she frequently bumped her left breast against the automobile tires and wheels around which she was working. She observed that early in 1954, she developed some swelling of the left breast. Accompanying this she had a 'tight feeling' in her neck when she lay down. This feeling of pressure extended down her chest wall toward her heart and 'must have been the swelling.' All her complaints have improved with rest.

"At present she complains of pain in her arm which follows no anatomical nerve distribution. She described a similar pain accompanied by tenderness and swelling in the area of the left pectoralis major and left axilla. The chest pain radiates directly through to her back whenever she does hard work with her left arm. In addition, she complains of pain in her neck muscles all the time. 'I suffer all the time when I do my work. Many times I can't even turn in bed and I get a numbness. The circulation in my arm isn't right. It goes to sleep on me almost every night since I've had this trouble.' She claims that her symptoms had made her irritable and short-tempered.

"Past history reveals that the patient was the eighth of twelve siblings born to parents of Croatian extraction in a Pennsylvania mining town. She described her mother as 'mean' and abusive. Her father, by contrast, was good to her and she entertained tender feelings toward him. She was withdrawn from school in the seventh grade to help with the housework. She married at the age of seventeen to get away from home. She had no knowledge of sex. Her marriage was unhappy. Her husband was unfaithful. She had two children who died in the first year of life. After twelve years of separation a reunion was attempted in 1942. It was unsuccessful and they were finally divorced in 1943. When the patient had difficulty in getting her husband to pay the alimony awarded to her, she simply gave it up.

"Five years ago she had a hysterectomy for fibroids. Otherwise her health had been good.

"Mental examination revealed a patient who at first was wary and apprehensive. As the examiner was able to set her at ease, she offered a constant stream of information without prodding. Even though this voluntary elaboration and extension of her complaints placed her in a position where she was liable to additional questioning and investigation, she made no effort to withhold or evade as is commonly seen in malingerers. She appeared totally guileless and even stupid. She was ashamed of being nervous though avowing that she couldn't help it. Again, this reaction would be unusual for a malingerer who usually exploits any claims to illness, physical or mental. The patient impressed me as being a reasonably independent person. This impression is supported by the manner in which she has made her own way as a factory and restaurant worker since her separation from her husband without recourse to alimony. Since January, when she was last employed, she has lived on her savings and has received some help from her boy friend.

"Some interesting circumstances preceding her illness were found during the examination. Within the year preceding her illness, a nephew, of whom she was very fond, developed a psychosis. She had cared for this nephew and had strong maternal feelings toward him. At about this same time she was

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supposed to marry her present beau but decided against it as she was afraid of marriage. Most interesting is that a friend who worked with her on the same assembly line, developed carcinoma of the breast just before the onset of the patient's symptoms. I feel that many of her symptoms and their progression represent a duplication of those which she saw in her friend. She is still very fearful of breast carcinoma in herself, in spite of the assurances of the many doctors who have examined her.

"I believe this patient is suffering from a conversion reaction which was precipitated by the type of work she was doing and by a probable myositis which was caused by this work. The illness of a dearly loved nephew and the frightening prospect of marriage were predisposing factors. As a more remote predisposing factor it should be noted that her strong attachment to the parent of the opposite sex with a hostile or rejecting attitude toward the parent of the same sex is a constellation typical of hysteria. The actual symptoms which she developed, though precipitated by her work experience, were probably directed by the symptoms of her unfortunate friend and co-worker."

Symbolic Injury

CERTAIN parts of the body have a special symbolic significance to the individual. Aside from the physical loss or damage itself, the individual attaches an inordinately high value to particular parts of his body. A great deal of mental energy is required to adjust to the physical loss *per se*. The symbolic loss requires an even greater expenditure of mental energy which might not be available. For example, an individual loses a hand or an eye. The patient undergoes a herniotomy, a hysterectomy, or an operation around the genital area. He is prone to place such a special value on these parts that he may not be able to summon the energy to handle the blow.

Diseases Associated with Emotional Factors

IF THE CLIENT prior to the injury has been afflicted with certain diseases, you might suspect some kind of ripeness for the development of a traumatic neurosis. Examples of such diseases frequently associated with emotional factors are: stomach disorders, such as ulcers; bowel disorders, such as colitis; allergic asthma; migraine headaches; hypertension; certain skin disorders, such as neurodermatitis. If such diseases develop following injury, they may be the actual results or sequelae of the injury.

The Armed Services

THE INJURED client should be asked if he has been in the armed forces. If a male client has not served in the military and his age is proper for such service, the attorney should investigate the reason, not necessarily accepting the statement of the client as to the reason for his nonservice. The type of discharge may also be significant. If the client's service is shorter than the usual stay, or if the client is vague as to the reason for his discharge, these may be clues that bear investigation. Frequently the client will tell you that he has been discharged because of "nerves," or "nervousness" and is actually unaware of the psychiatric nature of the discharge.

Institutionalization

IF THE LAWYER obtains information that the client has been in a mental hospital, he should consider the possibility of a psychiatric evaluation. The individual who has been in such an institution often does not fully recover from his mental illness. Frequently the former mental patient, who subsequently has adjusted fairly well to life and who then suffers an injury, reactivates his old disturbances. Example: a man who had been hospitalized for an acute psychotic episode was released and began to rebuild his defenses. Although he had not completely solved the problems which had brought about his original breakdown, he was working regularly, gradually building up his mental equilibrium, and living a fairly well adjusted life. He then suffered an injury in which he lost one of his eyes. The defenses which he had been building were weakened by this injury and this man eventually committed suicide.

Family and Personal Relationships

THE CLIENT who has been a partner in a number of marriages or has shown an inability to form a stable personal relationship may also be particularly susceptible to the development of an emotional disturbance following injury.

Migratory Work History

THE CLIENT who has been working for a number of employers and has been unable to maintain a job may unconsciously use an accident to permit himself to withdraw from the competition of the job market.

Criminal Record

A LONG criminal record involving petty offenses is a further indication of an inability to adjust to the demands of life.

The Active Partner

THE INJURED client who brings his spouse with him to every conference, the spouse seeming to take charge of and direct the situation, is frequently found to be suffering from an emotional disturbance.

The Writer

THE NEUROTIC client frequently presents himself to you with a voluminous written record of his case. He includes copious and minutely detailed notes of each relevant and irrelevant event, copies of letters to the insurance carrier, the attorney general, the governor, etc.

The Negative Medical Report

YOU HAVE a client who seems to be sincere in his complaints. Yet, you receive a negative medical report from an orthopedic surgeon or a general practitioner. This is a signal to consider the possibility of a psychiatric consultation. Frequently, after receiving a negative medical report from a nonpsychiatric physician, I have called the doctor and have been advised that the client very well might have a neurosis. There are many reasons why the doctor has not included the possibility of a neurosis in his report. Some doctors say that they deliberately avoided stating that the patient might have a neuro-

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sis because they did not want to stir something up. Other doctors say they did not feel qualified to include the possibility of a neurosis in their reports because they were not psychiatrists. Still others have said that, upon reflection, there very well might have been a neurotic disturbance that they had missed. If you as a lawyer are convinced that your client is sincere and if you have a negative medical report, you have little alternative other than to seek the aid of a psychiatrist or a psychologist in evaluating the matter. The man has a pain. It must be explained some way. Either the organic basis has been missed or the functional basis has not been explored.

At the Trial

A. Workmen's Compensation vs Negligence Case

UNFORTUNATELY, most people are unsympathetic to the person who is without a physical basis for his complaints. Thus, the lawyer trying a traumatic neurosis case before a jury is under a greater handicap than if he were trying a similar case before the Workmen's Compensation Department or a court. I do not mean to imply that the judge or the [Workmen's Compensation] hearing referee is free from these prejudices. Experience, however, with a neurotic tends to lessen the prejudice of the judge and the lawyer. We may find, therefore, that the request for a jury comes from the defendant's counsel rather than from the plaintiff's.

Let us examine our own feelings toward the neurotic client. We call him a crack-pot or a nut or a crank. We are slightly apprehensive about him. We also are suspicious about the pain about which he complains. If a client has a ruptured disc, we accept his complaints of pain. If he has the same degree of pain but without an organic basis, it is difficult to understand how the pain got there and to accept the fact that there actually is pain. The psychiatric expert and the lawyer must make it absolutely clear to the court and the jury that the pain experienced by the neurotic is as real as if the physical basis were indeed present.

We tend to think that, if the pain is produced by a mental process, a simple effort of will could eliminate it: "What this man needs is to take hold of himself and use a little willpower." That just isn't so. The neurotic can no more chase away his feelings of pain than the man who has the ruptured disc. The psychiatric witness, therefore, must explain to the court and the jury that the neurotic is absolutely unable to control his feelings, his pain and his disability.

B. Preparation

THOROUGH preparation is necessary in any case and it is particularly necessary in a traumatic neurosis trial. It has been my experience that attorneys will prepare thoroughly for all kinds of medical cases. Conscientious attorneys will study, through reading and talking to doctors, for cases involving a skin cancer, an asthmatic allergy, an embolism, Dupuytren's contracture and even rarer diseases. Rarely do attorneys make the same preparation for a neurosis case. They should approach the disease of neurosis with an open mind. They should regard it as any disease they come across for the first time and not reject it for want of knowledge. Once a lawyer has some understanding of emotional disturbances, it is fairly difficult for him to reject it as just hogwash.

The lawyer should, of course, talk to every witness prior to trial. He should particularly talk to the psychiatric witness. The psychiatrist may tell you that he cannot help your case inasmuch as he doesn't believe that the neurosis was *caused* by the injury. The psychiatrist may be thinking in terms of the various traumas which the patient has experienced in his lifetime. He believes that all of these traumas have combined to produce the neurosis. That is undoubtedly true. It is the duty of the lawyer to explain the difference between the concepts of scientific, medical causation and legal causation. Legally, the liability is present if the injury merely acts as a precipitating factor in the production of the symptomatology of the neurosis. With this, the doctor may readily agree.

C. Selection of an Expert

THE PSYCHIATRIST is necessary in a traumatic neurosis case because he has a medical degree and is considered best qualified to establish the relationship between the injury and the diagnosis. The psychologist can furnish great aid by making the psychiatric findings more objective. Objective findings are always valuable to the lawyer because the veracity of the client thus can be substantiated. The psychiatrist infrequently has objective psychiatric findings in his examination. Although objectively he can observe a tic, sweaty palms, tremors, abnormal skin temperatures, nail biting and stuttering, such objective findings are rare and subject to the skepticism of the layman as to their psychogenic etiology.

The psychologist, on the other hand, conducts certain tests on the patient. The tests are unconventional and there are no "correct" answers. One of the tests, for example, is the Rorschach. The patient is presented with a series of ink blots, some of which are in color. He is asked to tell what he sees and, later, what made him see it that way. It is obvious he woudn't be able to know what kind of an answer would help him in his purposes, and, thus, would be unable to simulate.

Furthermore, the psychological test has been standardized by using thousands of known cases for purposes of comparison. Thus, objective interpretation is much more possible by comparing the patient's responses to the typical responses of many other persons, both normal and abnormal, who previously have been tested. The psychiatrist, on the other hand, is much more limited in comparing the patient's responses because of the fewer number of cases he himself has seen.

Another advantage of using a projective test such as the Rorschach or the Thematic Apperception Test is that it can be administered, scored and evaluated in a shorter space of time than it often takes a psychiatrist to formulate a reliable diagnosis through the interview method. Since the lawyer is limited financially and timewise, this point assumes a particular significance.

In the final analysis, however, the competence of the opinion of both the psychiatrist and the psycholo-

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gist rests upon the experience and skill of the individual examiner. The interpretation of psychological tests is much more than a mere matter of mathematical compilation and tabulation of answers followed by comparisons with standard tables. The expert psychologist must, in addition to the quantitative estimation of the patient, make a qualitative appraisal which obviously is in the realm of the subjective.

D. Direct Examination

THE LAWYER sends the client to the psychiatrist who conducts an examination almost entirely by interview. His diagnosis, therefore, may be based upon hearsay and self-serving statements. Because of the nature of the examination, the psychiatrist should be permitted to testify as to his findings and diagnosis with far greater latitude than is permitted the nonpsychiatric witness. The Michigan Supreme Court has not passed on this question. In order to avoid this problem, it is best to adduce the necessary information, upon which the psychiatrist will base his conclusions, from the plaintiff himself and other witnesses. Then, in a hypothetical question, the psychiatrist can draw a conclusion, from the facts in evidence, as to diagnosis and relationship between the injury and disease.

E. Cross-Examination

(1) A FREQUENT defense in a traumatic neurosis case is that the plaintiff was neurotic prior to the injury. The defendant's psychiatrist should be cross-examined along the following lines: The plaintiff, even if neurotic prior to the injury, was able to work. The injury acted as a factor in producing a disabling symptom. Thus, although the injury may not have precipitated the neurosis, it caused the disability.

(2) FREQUENTLY, in a traumatic neurosis case, the defendant will produce one or more nonpsychiatric doctors, such as a surgeon or an internist. Such witness may testify that his examination was completely negative and the patient is perfectly well. The witness will, however, probably admit that he expresses no opinion upon the question of functional disability and that the patient could be totally disabled on the basis of a psychiatric disorder.

(3) A psychiatrist often states that "secondary gain" factors are involved. Once the neurosis has developed, the patient unconsciously may find it useful in that he is able to obtain some secondary benefits, such as being taken care of, or compensation. It should be brought out that (1) secondary gain does not always refer to monetary gain; (2) that secondary gain factors are strictly on an unconscious basis; and (3) the neurosis must have existed prior to the development of the secondary gain factors.

A Case History

THE FOLLOWING is an actual history of a case which amply illustrates the value of being able to recognize the possibility of a traumatic neurosis for both the plaintiff's and defendant's attorneys.

On June 6, 1955 a woman, age 42, presented herself at our office stating that on October 6, 1954 she had slipped on the floor of a canning company and injured both knees. She claimed that she was still physically disabled and unable even to do her housework although the company doctors had discharged her. She was accompanied by her husband who did a great deal of the talking for her. A claim was filed.

The insurance carrier's medical report dated May 6, 1955, by a qualified orthopedic surgeon, stated: "Conclusions as follows: Essentially negative x-rays. I believe this woman sustained a simple strain of the capsule of the knee joint which will subside with rest. Prognosis is for full recovery."

On May 16, 1955, this surgeon again stated: "In my opinion the above named woman may return to favoring work." Report of July 7, 1955, by another orthopod: "Negative X-rays. I am unable to account for her complaints and think that she had perfectly normal knee joints. There is no organic disease that I could find on this examination." Note this sentence. When a doctor says he finds no *organic* disease present, it is a white flag that he may be thinking of *functional* disease.

On June 22, the client was advised that, by arrangement with the insurance carrier and the employer, she was to return to work in accordance with the doctor's suggestions and make an attempt to rehabilitate herself. She then applied for work but, instead of being given work, was given a layoff slip.

She continued to visit her attorney with her husband, complaining of her severe disability. We began to form an opinion, particularly in view of the medical reports, that there might be some functional disturbance and wrote the insurance carrier as follows: "I believe it is extremely urgent that the employee be rehabilitated. While I have not yet sent her to a psychiatrist for evaluation, from our experience and observation we fully believe that she has now developed a traumatic neurosis. I would recommend either rehabilitating employment or evaluation by a psychiatrist for rehabilitation under his direction." The insurance carrier neither employed her nor sent her to a psychiatrist. However, counsel referred her to a psychiatrist who examined her on August 17, 1955, and made the following report: "The diagnosis of psychoneurosis hysteria-conversion type of both legs explains her pain and findings. It is my opinion that the injury may have precipitated this illness."

An amended claim was filed alleging the psychoneurosis and a letter, dated August 25, 1955, was sent to the carrier as follows: "I am enclosing a photostatic copy of the psychiatrist's report. This clearly indicates that the employee is suffering from a psychoneurosis causally related to her injury. I am advising you of this so if you care to have her examined by a psychiatrist you may do so. However, I might suggest a settlement of this case in the sum of $3500.00."

The reply we received was a request for a further medical examination and on September 16, 1955, she was examined by a competent industrial physician whose report concluded: "I am unable to find in this woman's knees any evidence of the injuries she claims. Of one thing I am sure, no organic pathology has resulted from her injury." The insurance carrier

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then cited her to an internist for further evaluation, which evoked the following protest from counsel: "It seems to me that you would be spending your time and our client's reserve of psychic shock due to medical examinations to better advantage by sending her to a psychiatrist instead of to an internist."

On October 10, the internist's report contained the following: "In summary, I was unable to find evidence of organic disease to cause any appreciable degree of disability."

Then, for the first time, on November 1, the client was examined by a psychiatrist on behalf of the carrier. His report, in pertinent part, was as follows: "Diagnosis: conversion reaction, chronic, moderate hysteria. This woman who apparently had a rather minor trauma to both knees has by suggestion come to the conclusion that she is suffering from serious disorder. A physician who saw her and told her there was nothing wrong with her did not help the matter. I believe that this woman can benefit by psychotherapy and following this her case should be closed as soon as possible. As it is, she has had so many examinations and tests that her attention is now fixed on this part of her anatomy."

A letter then was dispatched to the insurance carrier: "I believe that you wish to follow the advice of your psychiatrist and settle the case. I believe that a proper sum in this case is $3500.00." On December 5, the following letter was received: "The problem in this case has been resolved and we inform you that the matter is settled for the sum of $3500.00. Enclosed please find redemption agreements."

Returned to Work

AT COMMONWEALTH Edison Company we have found that with care and judgment we can put cardiac patients back to productive work. We have developed a positive program for handling such cases.

This program begins while the employee is still under his doctor's care. Our medical staff keeps in close touch with the attending doctor. When it seems likely that the employee has sufficiently recovered, he is called in for a consultation with the heart specialist on our staff.

During the past six years about 10% of our heart patients were released to their former jobs with no restrictions or change of duties. Most of these had clerical jobs requiring a minimum of physical exertion. For the other 90% the Medical Director recommended either restrictions on the former job or a different kind of work.

Cases of this type are handled by what we call a medical conference. The permanent members of this conference group are the personnel director, the Medical Director, the superintendent of employee services, and the superintendent of employment. The employee's department head also attends. The medical conference begins with the Medical Director describing the patient's present physical condition and outlining the work restrictions that must be observed. The decision as to what job the patient may return to is then up to the other members of the group. The fact that four of these are permanent members of the group insures that the experience gained in handling previous cases may be brought to bear in the case at hand.

The conference realizes that most employees would like to return to their old job or one as near like it as possible. Therefore, five possibilities are usually considered in the order of their desirability. First, is the possibility of returning the employee to his former job. It is reassuring to him to return to work he knows, to be with his associates, and to prove that he is useful again. If the imposed restrictions will allow, the conference endeavors to reach such a solution. In over half of these cases, the group has been able to return the employee to his old classification in spite of the restrictions imposed. An example is an auto mechanic on whom the Medical Director had placed the restriction of no heavy lifting or straining. It was brought out that it would be quite feasible to assign him to lighter work such as motor tune-up, and bench work involving generator and starter repairs.

The second solution in order of desirability, is to give the employee a nearly similar job in the same department. The difficulty here is that when an employee is transferred to a different classification he either loses his seniority or retards the promotion of others. Our union agreement has a clause that relieves this situation to some extent. It provides that employees with "long and faithful services," who are unable to carry on their regular work, may, under certain conditions, be transferred without loss of seniority. This provision is worded in rather general terms, but it provides a basis for the company and the union to cooperate in arriving at a satisfactory solution.

The third possibility is a different type of work in the same department. When this can be done it makes it possible for the employee to continue working in a department where he is acquainted.

The fourth and fifth possibilities are similar work and different work in another department. It takes a lot of the collective knowledge, experience, and resourcefulness of the conference group to locate appropriate jobs in these categories. But it is usually worked out. For example, one person whose hobby is landscaping was given a job supervising landscaping on company property. It was necessary work, and an activity for which he was well suited, and in which he'd be happy. The efforts we have made in placing these heart patients in productive jobs have been worth while both to the employees and to the company. The employees return to a normal life and the company retains skills that might otherwise have been wasted.

—From "Returning the Cardiac to Work," by JOHN W. EVERS, President, Commonwealth Edison Company, Chicago, at the Heart-In-Industry Conference of the Chicago Heart Association, November 28, 1956, published in "Health Problems on the Production Line."

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Books on Occupational Health and Their Medical Authors

JEAN SPENCER FELTON, M.D., Professor of Preventive Medicine
Department of Preventive Medicine and Public Health
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BOOK publications for any branch of science reflect maturity. Fecundity in sound periodical contributions and brochures is indicative of current progress. By either measurement, occupational health has exceeded what might have been anticipated. Just what a book is becomes a matter of definition. By the Journal's definition it becomes necessary to omit large numbers of elaborate brochures, unquestionably meritorious. For immediate purposes, the inclusion extends only to the United States.

No specialty in medicine is any better than its published literature. Here, then, are listed by Dr. Felton some book publications on occupational health written by industrial physicians in the United States or by other physicians in this country writing on occupational health topics—EDITOR.

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In Praise of Inefficiency

AT LONG LAST, someone is beginning to talk back to the efficiency expert. The man with the stop watch, timing every move and motion on an industrial or clerical job, is no longer the Poobah of business he used to be. Indeed there are management men who harbor a happy feeling that a modicum of inefficiency can have many blessings. The cold fact is that no method of doing a job has yet been devised that the employee cannot figure a way to beat. The coffee break, for example, is in effect a socially accepted group technique for confounding the efficiency expert. It all began in the insurance field, where mountains of paper work required the services of thousands of clerks. To save time and keep cost down each step of the processing, from opening the mail to the filing, was broken down into the minutest detail. The monotony was deadly. Thus began the trek to the water fountain. Now the water fountain is to an office what the party line is to a small New England town. It's the gossip mill, it's the communications center, it's the lonely hearts club. When the pretty young clerks began to congregate around the area of the watered globe, how long do you think it was before gay blades around the office began to develop pangs of thirst? Water being no stimulant, someone was sure to suggest that coffee revives the zest for work, eliminates fatigue. And so down to the corner drugstore—and an institution was born. The time that was saved by stratifying the clerical process has been lost many times over because the self-devised rest period for the regimented soon became the privilege of everybody, and those who had previously gone through their day without ever thinking of time out for java now pine for the stuff—during working hours only, of course. The incentive system in factories has been equally frustrating to the efficiency minded businessman. The logic behind incentives is simple. Give a man a chance to make more money by producing more and he will put his shoulder to the wheel and turn out more goods. Logic and human beings don't always mix well. It's been a universal experience that factory employees under incentives "peg" their production. They put a ceiling on their output (and income too), and though they can turn out lots more during an eight-hour stint, they just don't. The American worker figures out what he needs and wants for a week's pay and will produce only enough to meet that objective. Occasionally when the little woman begins to demand a new television set or a fur coat, the employee will put in extra effort to meet that nagging demand. But he will soon fall back to what his work-group has decided they will turn out. In factory after factory, an astute observer can see little bundles of parts or other finished goods under employee workbenches. This is insurance in the form of extra work put out but not reported to management. On some days when the employee feels a little lazy and doesn't want to put in even normal effort, he can draw from this bank and thus keep his production record up to standard. Management is no longer a slave to the idea of efficiency for efficiency's sake. If a method might save time and money—on paper—but interferes with job satisfaction, the rigid technique is likely to be scrapped. The other day an efficiency man was surveying a large office. He stopped to watch the file clerks. The letters were stacked at one end of the file cabinets and the girls walked the length of the aisle, picked up a few letters, and then went back to the appropriate alphabetical section. "Inefficient," he said to the office manager. "I used to do it your way," he told the expert, "and I had a big turnover. Now, the girl has a chance to rest between filing operations. The walk does her good. She can look out the window, chat with the other girls. Gives her a change of pace, and she can dream about a date. Been doing this for a year and haven't lost a worker. That's what *I* call efficiency."

—LAWRENCE STESSIN, in *Forbes*, January 1, 1957.

Maximum Permissible Radiation Exposures to Man

A Preliminary Statement of the
NATIONAL COMMITTEE ON RADIATION PROTECTION AND MEASUREMENT

PRELIMINARY statement of the National Committee on Radiation Protection and Measurement (NCRP) has been issued, presenting in brief form the essential changes introduced by its new recommendations on permissible radiation exposure. In making its new recommendations, the Committee reviewed its past recommendations in the light of increased knowledge about the long-range effects of radiation exposure on the genetic make-up and life expectancy of man.

The NCRP is an advisory group of experts in various phases of the radiation field, and is made up of representatives from the following organizations: American College of Radiology, American Dental Association, American Industrial Hygiene Association, American Medical Association, American Radium Society, American Roentgen Ray Society, International Association of Government Labor Officials, National Bureau of Standards, National Electrical Manufacturers Association, Radiological Society of North American, U.S. Air Force, U.S. Army, U.S. Atomic Energy Commission, U.S. Navy, and U.S. Public Health Service.

The Committee is sponsored by the National Bureau of Standards, and its recommendations are published by the Government Printing Office in the NBS Handbook series.

Because the new recommendations of the NCRP will affect material contained in many of its handbooks, revisions of the latter will be undertaken at an early date. Until these revisions are completed and ready for publication, an effort will be made to prepare for each handbook a simplified statement of the changes needed to comply with the new recommendations. These summary statements will be released to the technical journals for publication as they are completed, and will be used with the handbooks now in stock. The full and detailed changes will be incorporated in the revised editions of the handbooks.

Preliminary Statement

SINCE the publication of NBS Handbook 59 on Permissible Dose from External Sources of Ionizing Radiation, the National Committee on Radiation Protection and Measurement (NCRP) has continued the study and review of its recommendations, particularly with respect to genetic effects and the possible shortening of average life expectancy due to radiation exposure of a larger fraction of the population. The NCRP proposals resulting from these studies had an important influence on the decisions reached by the International Commission on Radiological Protection (ICRP) in Geneva in April, 1956, which resulted in a general lowering of the maximum permissible accumulated dose (MPD) for occupational radiation exposures, as well as for exposures of the population as a whole. These changes are in accord with the informal agreements reached by the ICRP in Stockholm in 1952.

The NCRP has now agreed upon the formulation of revised recommendations on maximum permissible doses which integrate the national and international views for practical application. The Committee is pleased to note that the findings of the ICRP are reinforced by the important information and data provided in the subsequent reports of the National Academy of Sciences and the British Medical Research Council.

The changes in the accumulated MPD are not the results of positive evidence of damage due to use of the earlier permissible dose levels, but rather are based on the desire to bring the MPD into accord with the trends of scientific opinion; it is recognized that there are still many uncertainties in the available data and information. Consideration has also been given to the probability of a large future increase in radiation uses. In spite of the trends, it is believed that the risk involved in delaying the activation of these recommendations is very small if not negligible. Conditions in existing installations should be modified to meet the new recommendations as soon as practicable, and the new MPD limits should be used in the design and planning of future apparatus and installations.

Because of the impact of these changes and the time required to modify existing equipment and installations, it is recommended on the basis of present knowledge that a conversion period of not more than five years be adopted within which time all necessary modifications should be completed.

Definitions

FOR THE purposes of this preliminary statement, the following tentative definitions are given:

Controlled Area. A defined area in which the occupational exposure of personnel to radiation or to radioactive material is under the supervision of a radiation safety officer. (This implies that a controlled area is one that requires control of access, occupancy, and working conditions for radiation protection purposes.)

Workload. The output of a radiation machine or a radioactive source integrated over a suitable time and expressed in appropriate units.

General Electric X-Ray News, 29:2 (February) 1957.

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Occupancy Factor. The factor by which the workload should be multiplied to correct for the degree or type of occupancy of the area in question.

RBE Dose. RBE stands for relative biological effectiveness. An RBE dose is the dose measured in rems. (This is discussed in the forthcoming report of the International Commission on Radiological Units and Measurement.)

MPD Recommendations for Controlled Areas

1. ACCUMULATED DOSE. The maximum permissible accumulated dose, in rems, at any age, is equal to five times the number of years beyond age 18, provided no annual increment exceeds 15 rems. Thus the accumulated MPD = 5 (N-18) rems where N is the age and greater than 18. This applies to all critical organs except the skin, for which the value is double.

2. *Weekly Dose.* The previous permissible weekly whole-body dose of 0.3 rem, and the 13-week dose of three rems when the weekly limit is exceeded, are still considered to be the weekly MPD with the above restriction for accumulated dose.

3. *Emergency Dose.* An accidental or emergency dose of 25 rems to the whole body, occurring only once in the lifetime of the person, shall be assumed to have no effect on the radiation tolerance status of that person. (See National Bureau of Standards Handbook 59.)

4. *Medical Dose.* Radiation exposures resulting from necsesary medical and dental procedures shall be assumed to have no effect on the radiation tolerance status of the person concerned.

MPD Recommendations for the Whole Population

5. THE MAXIMUM permissible dose to the gonads for the population of the United States as a whole from all sources of radiation, including medical and other man-made sources, and background, shall not exceed 14 million rems per million of population over the period from conception up to age 30, and one-third that amount in each decade thereafter. Averaging should be done for the population group in which cross-breeding may be expected.

Recommendations for Internal Emitters

6. IN CONTROLLED areas, the permissible radiation levels for internal emitters will conform to the general principles outlined above. Where the critical organ is the gonad or the whole body, the maximum permissible concentrations of radionuclides in air and water will be one-third the values heretofore specified for radiation workers. Where single organs other than the gonads are regarded as the critical organ, the present maximum permissible concentrations will continue. For individuals outside of controlled areas, the maximum permissible concentrations should be one-tenth of those of occupational exposures. (Other changes in the maximum permissible concentrations for radionuclides may be introduced because of additional information developed since the publciation of National Bureau of Standards Handbook 52.)

Discussion of Revised Recommendations

7. THE MPD for occupational exposure is based on the absence of detectable injury to the individual. It remains at its present level of 0.3 rem/week for the whole body. Where the dose in any week exceeds this value, a dose of 3 rems in 13 weeks may be accepted. The 13-week period may start at the beginning of the calendar quarter or the beginning of the week during which the permissible weekly dose was exceeded.

8. The rules given in Handbook 59 will be continued for operational and administrative purposes, but some of the rules will be modified by provisions related to an average yearly limitation of occupational exposure to external sources of ionizing radiation of five rems to the blood-forming organs, gonads, and lens of the eyes, and of 10 rems to the skin. The use of five rems in the statement of the revised rules is for the purpose of design and administration. The critical limitation will be that defined for the total accumulated dose in paragraph one above.

9. If a person's occupational exposure is documented or otherwise known with reasonable certainty, he may be permitted to use his reserve exposure in accordance with paragraphs one and two above. In all other cases, he shall be assumed to have received his maximum accumulated dose as indicated in paragraph one above.

10. It is considered that with the current, and proposed low levels of occupational exposure, it is presently not necessary to make special allowance for medical exposure in conjunction with occupational exposure. This consideration may later become important. The effects of medical exposures have long been considered by this Committee to be the responsibility of the attending physician; it is his responsibility to evaluate medical radiation exposure in relation to the health of the individual. (See Handbook 59.)

11. In the determination of the population dose in the vicinity of radiation sources, proper consideration should be given to occupancy factor and to work load. The exposure of individuals outside of controlled areas may be integrated over periods up to one year.

12. While at the moment it is not feasible to determine the average exposure for the population with any reasonable accuracy, the adoption of some figure is necessary for planning purposes. For the immediate future, it may be assumed that the total integrated RBE dose received by all radiation workers will be small in comparison with the integrated RBE dose of the whole population. Furthermore, persons outside of controlled areas, but exposed to radiation from a controlled area, constitute only a small portion of the whole population. Therefore, if this small portion is assumed to receive yearly an average per capita dose of 0.5 rem, the total dose to the whole population from man-made radiations is not likely to exceed 10 million rems per million of population up to age 30. (This assumes a dose of four million rems per million population over this period from background radiation.)

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1957 Industrial Health Awards

NATIONAL INDUSTRIAL HEALTH CONFERENCE
April 20-26, St. Louis

William S. Knudsen Award

THE WILLIAM S. KNUDSEN AWARD, Industrial Medicine's highest honor, was presented to James H. Sterner, M.D., April 24, 1957, at the Annual Banquet, National Industrial Health Conference, St. Louis. Making the presentation, Max Burnell, M.D., Medical Director, General Motors Corporation, and Chairman, Industrial Medical Association Knudsen Award Committee, said:

"Tonight the IMA in presenting the 1957 Knudsen Award not only honors one of its most distinguished members but, in turn, we of the IMA are ourselves honored in having among our membership so distinguished a world citizen. The breadth of his interests since his graduation 25 years ago from Harvard Medical School is nothing short of astounding — Industrial Physician — Toxicologist — Author — Teacher — Consultant. He has served with distinction as a member of the National Research Council, the American Chemical Society, the World Health Organization, and as a Consultant to the U. S. Public Health Service on radiation studies. The service and sage advice he rendered his country as a member of the Medical Advisory Board of the Manhattan Project, Atomic Energy Commission, and Operations Crossroads (Bikini experiment) place all of us deeply in his debt. It is fitting that we of the IMA bestow the William S. Knudsen Award — the highest honor in industrial medicine — upon our distinguished member, Dr. James Hervi Sterner."

DR. JAMES H. STERNER was born in Bloomsburg, Pennsylvania, in November, 1904; was a student at Pennsylvania State Teachers College at Bloomsburg, 1925; received his B.S. at Pennsylvania State College, 1928; graduated M.D., Harvard Medical School, 1932. He was house officer, New England Deaconess Hospital, Philadelphia, for two years, and Chief Resident Physician for two years. He became Director, Laboratory of Industrial Medicine, Eastman Kodak Company at Rochester in 1936; was Medical Director, Clinton Engineering Works, Tennessee Eastman Corporation, Oak Ridge, Tennessee, and Medical Consultant, Holston Ordnance Works, Kingsport, Tennessee, during the war years; was appointed Associate Medical Director, Eastman Kodak at Rochester in 1949, Medical Director in 1951. In 1945 he was made a member of the Interim Medical Advisory Board, Manhattan Project, Atomic Energy Commission; and, in 1946, also a member of the Radiological Safety Section and Medicolegal Board, Operations Crossroads ("Bikini — An Industrial Hygiene Experiment," *Indust. Med.*, 16:6,279 (June) 1947). Since 1947 he has been Consultant on Industrial Health, Atomic Energy Commission, a member of the Committee on Toxicology National Research Council, and a member of the subcommittee on Nutrition and Toxic Reactions in Industry, Food and Nutrition Board; has been Consultant, U.S. Public Health Service (Chairman, Committee on Radiation Studies), and is now on the Expert Advisory Panel on Social and Occupational Health, WHO, and a member of the Committee on Occupational Safety and Health, ILO. He has held a number of teaching positions; is Associate Professor of Medicine, University of Rochester School of Medicine; visiting lecturer on Industrial Hygiene, Harvard School of Public Health; Chief, Industrial Consultant Staff, Rochester General Hospital; Associate Physician, Strong Memorial Hospital. He is Fellow, Industrial Medical Association, American Association for the Advancement of Science, American Public Health Association, American Academy of Occupational Medicine (President, 1952-53); member of the AMA Council on Industrial Health (Chairman, Committee on Scientific Development), World Medical Association, American Industrial Hygiene Association (President 1948-49), American Chemical Society, State and local Medical Societies. He has contributed extensively to textbooks and journals in the fields of Industrial Medicine and Industrial Hygiene, and is a member of the Editorial Board, *AMA Archives of Industrial Health.*

Health Achievement in Industry

HUMBLE OIL AND REFINING COMPANY, Houston, Texas, received the Award for Health Achievement in Industry for 1957. Valliant C. Baird, M.D., is Chief Physician. The following is from the report by O. T. Mallery, Jr., M.D., Chairman of the IMA Committee:

"We select Humble Oil and Refining Company, Houston, Texas, for the Health Achievement in Industry Award for 1957. The responsible member of management under whom the Health and

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Medical Division functions is Mr. Ray H. Horton, Director, Humble Oil and Refining Company. Supplementing the outstanding record and progress of Humble's Medical Division have been the support, encouragement and vision of the company management . . . .

"Humble was the first oil company in the Southwest to establish an Industrial Hygiene Department. Historically as well, Humble was one of the first oil companies to carry out a complete industrial hygiene survey in an oil refinery. The industrial hygiene work is a function of the Medical Division and is carried out under the general supervision of the Chief Physician.

"The new changes and progress of the Medical Division can be summarized by saying that the management has not been content merely to stay abreast of the times in the field of industrial health, but also has made it possible to provide staff and facilities in ever-increasing numbers and to bring into being new medical services for the use and benefit of the employees. In addition to maintaining a company-wide examination program — the operation of a mobile medical unit which brings physical examination facilities to field installations throughout the Gulf Coast states — attention has been directed to the medical and health aspects of atherosclerosis and the epidemiology of mortality rate of the employee group as a whole. The atherosclerosis study is projected over a 10-year period of clinical follow-up as measured against base-line biochemical laboratory studies designed to test the predictability of group and individual manifestation of this important biological process. This study is being carried on in conjunction with the Medical Division and the Biochemical Department of Baylor University. The mortality rate study, which is based on a 20-year program involving 20,000 individuals, will correlate occupational factors with mortality statistics and trace and compare epidemiological factors in the employee groups with groups employed in other parts of the country and in different occupations."

Meritorious Service Award

CHARLES F. SHOOK, M.D., Medical Director, Owens Illinois Glass Company, Toledo, Ohio, was the recipient of the Industrial Medical Association's Meritorious Service Award. This was given "in grateful recognition for services to the Industrial Medical Association in the following capacities: Member, 1946; Fellow, 1952; Member, Committee on Practice, 1952-53; Chairman, Committee on Practice, 1955-57; Member, Membership Committee, 1952-53; Chairman, Membership Committee, 1953-54; Director, IMA, 1953-55. In accepting these responsibilities he has been prompt and diligent, and his contribution to the Association included outstanding service as Chairman of the Committee on Practice, the recruitment of many new members, and unselfish support of the Certification Program."

Merit in Medical Authorship

LEO J. WADE, JR., M.D., Medical Director, Esso Standard Oil Company, New York, was awarded the Industrial Medical Association Citation for Merit in Medical Authorship, for 1956. The award-winning article was Dr. Wade's outstanding discourse entitled "Needed—A Closer Look at Industrial Medical Programs," published in *Industrial Medicine & Surgery*, April, 1956, and in the March-April, 1956, issue of *Harvard Business Review*. Dr. Wade is Fellow, American College of Physicians, and Industrial Medical Association; Diplomate, American Board of Internal Medicine, and American Board of Preventive Medicine, in Occupational Health.

New Vice President

ROBERT E. ECKARDT, PH.D., M.D., Director, Medical Research Division, Esso Research and Engineering Company, Linden, New Jersey, newly elected Second Vice President of the Industrial Medical Association, graduated at Antioch College, Yellow Springs, Ohio, 1937, B.S. in Chemistry with honors, and went to Western Reserve University, Cleveland, where he did his PH.D. work, with Dr. Paul György, isolating vitamin B_6 with him, and then with Dr. Lorand V. Johnson as a Research Fellow in ophthalmological chemistry. He graduated M.D. at Western Reserve Medical School in 1943; served as intern and assistant resident in internal medicine at New York Hospital until October, 1944, when he entered the Army. In June, 1947, he returned to New York Hospital as Assistant Resident in internal medicine. A year later he joined Standard Oil of New Jersey's Medical Department staff; and in January, 1951, was made Medical Director of the newly created Research Division of ESSO. He is Diplomate, National Board of Medical Examiners, and American Board of Preventive Medicine in Occupational Medicine; Fellow, Industrial Medical Association, American College of Surgeons, New Jersey Academy of Medicine, New York Academy of Medicine; member, County and State Medical Societies, American Medical Association, American Industrial Hygiene Association (Director, 1953-55). He is an instructor in medicine at Cornell University Medical School, and Attending Physician in the outpatient department of New York Hospital; holds appointment as Associate Professor of Clinical Industrial Medicine at the Institute of Industrial Medicine, New York University.

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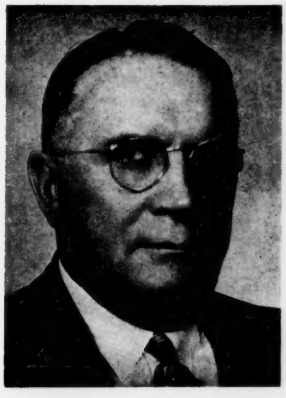
Industrial Medical Association

President's Page



THE PRESIDENCY of the Industrial Medical Association has become much more than a position of honor. It has grown into an office of responsibility and of opportunity; and, in addition, it is a place of high eminence, from which its incumbent can review the past, evaluate the present, and look out upon the future.

THE REVIEW of the past begins with the stalwart seven who, 42 years ago, signed the Articles of Incorporation of the Association. Six have been taken—to serve where Deity is the Chairman of the Board. One has been left—to watch the growth and flowering of the seed the seven planted, and to write a Foreword to the soon-to-be-published History of that growth.

THE PRESENT is ours. The seven workers have become many times that number. In a total of hundreds, the Officers and Directors, the Committee Chairmen and members, the District Counselors, the Regional Representatives, the Component Society leaders, the Conference Chairmen and their associates—these, and many more, freely and unstintingly are devoting their time and superior abilities to the advancement of the aims and purposes of the organization.

Already they have translated the 75,000 years of industrial medical practice represented by the IMA membership into a permanent and powerful influence upon the medical life and the economic life of the nation.

AS TO THE future, it can be predicted, with some assurance, that it will not be a mere extension of the past. History is said to repeat itself. But never before have the times been so dynamic; never before have so many frontiers challenged the explorer. Even now science is invading the infinite; the macrocosm of outer space is besieged; the microcosm of the atom is yielding its secrets. New ideas, new substances, new processes, new adaptations are almost our daily fare; and each tomorrow brings us more of the same. We look into a future of swift changes, increasing complexities, multiplying involvements unlike any the past has ever known . . . .

IN OUR professional expression we have a special responsibility. More than any others' it is *ours* to consider the individual in relation to his environment. We are the physicians of his health *in* his adaptations, not alone to restore, but also, and more important, to prevent—all the while with a true appreciation of his dignity and integrity as a person, having to work, needing his pay, living with his inadequacies, but still, and always, "a man for a' that."

IN BECOMING the Association's chief executive officer I do so with admiration and respect for the past, a measure of satisfaction with the present, and a plea for guidance in the months ahead. My distinguished predecessors—one by one, and each in his own way—contributed their best. Earnest is my hope that the same may be said of me.

Jerome W. Shilling M.D.

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Books

Each Other's Language

ATHLETIC INJURIES—PREVENTION, DIAGNOSIS AND TREATMENT, ed. 4, rev.: AUGUSTUS THORNDIKE. Lea and Febiger, Philadelphia, 1956, pp. 252, $4.50.

Aimed particularly at the physician reader is Thorndike's excellent compilation of data relating to trauma on the playing field. The discourse on physical fitness brings to summation the most recent studies of physical performance under the increased demands of effort. The level of fitness can be measured, and the status of athletes can be followed.

Metabolism as encountered in various task accomplishments is presented by organ systems, and such factors as fatigue, activity at high altitudes, and the use of artificial stimulants are discussed in the light of contemporary knowledge.

Presented well are the characteristics of the more common types of athletic injuries, and frequency figures document their occurrence. The tables are current, the line drawings depicting methods of strapping body parts are in exceptional detail, and the x-ray films have been duplicated onto the printed page with only a little loss of clarity. The bibliography of almost 200 references provides the reader with a wealth of background material stemming from the research laboratory, the orthopedist's examining room, and the desk of the statistician.

Thorndike, the clinician, talks the language of the workers he sees and treats—something that all keen industrial physicians should do. In "Athletic Injuries," just this is done, for clinical explanations are given for those terms in common conversational currency in every field-house dressing room: shin splints, mat burns, glass arm, pitcher's elbow, and drop finger, for example. Here, the intention is to familiarize the physician, not in frequent contact with sportsmen, with those entities rarely seen and understood, except by the team physician. This crossing of disciplinary lines is good, and the use of each other's lexicons is a practice to be wished for in other areas.

This book, as well as Thorndike's 1950 book in second edition, "A Manual of Bandaging, Strapping, and Splinting," published by Lea and Febiger, Philadelphia, belongs in the industrial physician's library—to aid in the prevention, diagnosis, and treatment of these injuries—but more particularly to increase the practitioner's awareness of what can happen on the field when the company's teams go out to play.

A Lot for a Little

ANNUAL REPORT Fiscal Year Ending June 30, 1956: A. G. KAMMER. Dept. of Occupational Health, Graduate School of Public Health, University of Pittsburgh, Pittsburgh 13, 1956, pp. 27.

Disregarding the major portion of this report, this review is limited to just one half page from a total of 27 pages, and this for good reason. Too often is encountered the charge that private agencies engaged in occupational health education and research pursuits have only scanty output offsetting high expenditures; that the number of students graduated seldom need 10 fingers for enumeration, and that research contributions are meager. Offsetting this in one institution is the following listing of the research work completed during the year: "Hazard from inhaled radioactive particulate matter," "Toxicity of industrial chemicals," "Field study of heat strain during basic training," "Physiological effects and heat uptake in clothed men exposed to infrared radiant heat sources," "Comparative susceptibilities of inbred strains of mice to tumor induction," "Field validation of instrument for analyzing and summing industrial noise," "Evaluation of stresses of exposure to heat," "Carcinogens in coal by-products," "Influence of air pollutants on cardiorespiratory performance," "Application of electrochromatography to analytical problems of industrial hygiene." These accomplishments represent an expenditure of only $164,749.

A.M.A. Exhibits

A.M.A. SCIENTIFIC EXHIBITS, 1956: American Medical Association. Grune & Stratton, New York, 1956, pp. 411, $10.00.

A graphic record of outstanding and award-winning scientific exhibits at the 1956 (Chicago) Annual Meeting of the American Medical Association, this is the second best thing to attendance at the meeting. For those who did attend, this book provides opportunity for the deliberate reexamination of the featured exhibits, and is far less taxing on the feet. Everything is here reproduced except the free Coca-Cola.

Helsinki International Congress

THE following persons plan to attend the Twelfth International Congress of the Permanent International Commission on Industrial Medicine in Helsinki, Finland, June 28 — July 6, 1957: Mrs. Marguerite N. Beaman, R.N., Dr. Leopold Brahdy, Dr. Heinrich Brieger, Dr. and Mrs. Henry S. Brown, Dr. and Mrs. Ethan B. Cudney, Dr. Samuel Deich, Lt. Col. E. J. Dehne, Dr. Charles Disney, Mrs. Patricia A. Gorman, R.N., Dr. Leonard Greenburg, Dr. Audrey Gunn, Dr. Edward M. Gunn, Prof. Theodore F. Hatch, Dr. Charles H. Hine, Dr. and Mrs. Edward C. Holmblad, Dr. and Mrs. E. S. Jones, Dr. Henry H. Kessler, Dr. Hedwig S. Kuhn, Dr. Charles W. Labelle, Dr. and Mrs. Robert T. Legge, Dr. Christopher Leggo, Dr. Carey P. McCord, Dr. G. E. McGlothlen, Dr. J. R. McMillan, Dr. Seward E. Miller, Dr. Thomas W. Nale, Dr. Evelyn E. Hartman Park, Dr. W. E. Park, Mrs. Mary F. Peyton, Col. Adam J. Rapalski, MC USA, Dr. Ada C. Reid, Prof. Fredric Rieders, Dr. Russel B. Robson (Canada), Dr. O. A. Sander, Mr. Frederick W. Sands, Dr. Ralph F. Schneider, Dr. Otis B. Schreuder, Capt. Lloyd B. Shone, MC USN, Miss G. Steward, R.N., Dr. Alfred P. Solomon, Dr. and Mrs. Arthur J. Vorwald, Dr. Harry E. Tebrock, Dr. Leo Wade, Miss Sara P. Wagner, R.N., Dr. C. Richard Walmer, Dr. Charles R. Williams, Dr. and Mrs. Rex Wilson.

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Specifications for an Industrial Medical Director

INDUSTRY'S executives are devoted to the practice of buying almost everything on "specifications." Not always do they acquire Medical Directors with an equally precise eye for specifications.

The I.M.A. Committee on Practice is engaged in the preparation of suitable specifications marking the good industrial Medical Directors. In the meantime, other specifications long ago prepared by the American College of Surgeons are still provocative and here are offered for current appraisal:

HE should be a graduate of an accredited medical school and licensed to practice in the state or province.

He should have at least one year's internship in an accredited hospital.

He should have some experience in general practice, either prior to or supplemental to his duties at the plant.

He should have a general knowledge of industrial relations, including employment methods and problems, transportation, housing, recreation, educational facilities and methods, and employees' benefit plans.

He should be qualified to determine by examination of employees their physical and mental fitness for work.

He should have a knowledge of the ingredients and of the toxic or disease-producing qualities of the materials and processes used in the industrial organization which he serves.

He should have a knowledge of sanitation, of working conditions, of accident and occupational disease prevention methods, and of preventive health measures in general.

He should have a knowledge of the diagnosis and treatment of occupational diseases.

He should be competent in the diagnosis and handling of all traumatic lesions which he undertakes to treat.

He should be versed in the procedure for follow-up and rehabilitation.

He should have a knowledge of workmen's compensation laws.

He should have a knowledge of an efficient record system and of statistical methods.

He should have an unbiased industrial viewpoint and a confidence-inspiring personality.

He should realize that his first duty should always be to the workman whom he examines and treats.

He should like people.

—C. F. SHOOK, M.D.

Manipulative Relations

TWO TOOTHSOME words treasured in the confines of occupational health are "human relations," meaning good human relations. In many industrial Medical Departments the fostering of good human relations is the core of the medical program. The wanted reach of good human relations is every worker, all management, the entire community — at all times and no "boo-boos." Therein is something altogether good, and no guile. Consternation would possess anyone on finding that the pursuit of good human relations had been challenged, vilified, reviled. One might as well question the inherent goodness of Santa Claus. But that very calamity has befallen. Naught but evil attends human relations: so preach some psychologists. They would have you believe that efforts to reach good understandings with the industrial worker are a diabolical scheme to manipulate and trap the mind. Promptly, any unwary responsive

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worker is reified — a human damnably molded into a thing. All is evil.

An analogy equally grievous, sometimes introduced, carries conviction. When, day by day, the merits of "Pubo" toothpaste are thrust through the ear and eye by way of radio, TV, and the printed page, the mind is manipulated, trapped, reshaped until the warped one has no choice. When he needs toothpaste the ding, ding, ding from his reified mind gives him no choice. "Pubo" it is. That is the goal of all advertising.

By no means are the "Pubo" buyer and the industrial worker the only victims. All elections now are determined by voters with minds distorted by viciously-calculated mind manipulation. And you know not when or how the trap was sprung. For the battle-line private soldier, what is preferred is the private with a brain so manipulated that fully automatically all tasks are carried out with no thinking allowed, even after the head is blown away and the reified reflexes take over.

Surely by this time the peril of the worker must have emerged. On all sides at his job, ogres and ogresses sneak and lurk, baiting traps to snap minds.

There are some things the psychologists do not know, nor even may be trusted to learn. One of those may be just everyday, down-to-earth goodness.

In the midst of that contemplation comes the horrible thought that we who are avowed dairymen of the milk of human kindness, all unknowingly have been manipulated and trapped — the victims of some superior reifiers who have implanted a noxious desire that, as we live among our fellows, we may understand them and be understood, that we engage in two-way communication in an atmosphere of empathy motivated only by that which promises human gains. Then, Glory be! Let us, the trammeled ones, continue our wayward dealings with all we touch.

There is yet another exploration to be made. Possibly the milk of human kindness of some psychologists has undergone lactic acid fermentation, with the inevitable outcome — curdling.

The Big Lie

THE PRINCIPLE of the big lie is uniformly simple: take a statement which is entirely credible, or even perfectly true, but take it out of context. Show picture or photo if possible. Then place it into a new context which has derogatory or infamous values. Continue with derogatory deductions which through assumptive thinking have been invested with the status of fact. And you have the newly charged propaganda item with entirely different meanings than the orginal underlying fact. Take the innocent example of a sanitation truck in New York City, which bears on its sides the legend "Keep New York Clean." A recent Russian propaganda item dubbed in a meaning that the legend is a plea to remedy the crawling filth of the city. The implication is that the legend "Keep New York Clean" is a desperate attempt to remedy the intolerable filth of the metropolis, the streets of which are said to be literally strewn with rubbish. Many people may well doubt that such and other propaganda is even half acceptable to any thinking person. They find it difficult to believe that a public, whether it be Russian people or the satellite ones who are behind the iron curtain, would believe such fabricated untruth. However, people in the United States at times forget that these people have no choice, and no other news for comparison which might give them a chance of evaluating its truthfulness. Political and economic aims are the goals no doubt, but they are shaped and influenced by the ideas behind the propaganda items. Here then we see the contest of ideas, the battle for man's minds to get them into the respective orbits of interests. In other words, the contest of ideologies must be resolved if the contest for markets is to be successful.

—From *Monthly Bulletin* of Di Cyan & Brown, March, 1957.